

THE CONCEPT "MEANING OF LIFE" AND ITS OPERATIONALIZATION IN REGARD TO THE DIAGNOSIS AND TREATMENT OF DRUG ADDICTS

Thesis

presented to the Faculty of Arts

of

the University of Zurich

for the degree of Doctor of Philosophy

by

Sarah Katz

of Tel-Aviv, Israel

Accepted on the Recommendation of

Professor F. Stoll Ph.D.

Zürich 1988

Zentralstelle der Studentenschaft



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*To my husband, thanks for your enormous
help and support, and to my children -
Sharon, Gilad and Carmel - thanks for
your consideration and understanding.*

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ABSTRACT

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Last - but by no means least, thanks to the subjects who cooperated through all stages of the study.

THE UNIVERSITY OF THE DISTRICT OF COLUMBIA

DEPARTMENT OF PSYCHOLOGY

PRINCIPAL OF THE STUDY OF PSYCHOLOGY

COOPERATION AND ASSISTANCE TO THIS STUDY

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A B S T R A C T

The two major purposes of this study are as follows:

1. To examine empirically, within the framework of Frankl's (1958, 1960, 1966, 1968, 1981, 1982, 1985) Theory of Logotherapy, the relationship between addiction to narcotic drugs and existential meaning.
2. To submit a battery of tests based on the afore mentioned theory, that will present a well substantiated prediction for the withdrawal and rehabilitation prospects of heavy-drug addicts.

While Frankl's theory is widely accepted, it has not yet been subjected to empirical validation, partly due to the fact that the concepts on which it is based have not yet been operationally defined. With the support of additional theories, such as Camus (1946), Battista and Almond (1973), Landau (1973) and Fabry (1968), "existential meaning" for the purpose of this study, was defined as: 'future time perspective, which is based on the assumption of responsibility and the motivation to change things, insight regarding one's uniqueness and the truth about oneself, a rational and positive attitude to life as against a negative attitude to death and a feeling of ability to be useful'.

The present study focused on 25 heavy-drug addicted patients enrolled in a private fee-for-service methadone

maintenance program in Tel Aviv, Israel. The subjects were drawn at random from a population of 250 patients enrolled in the same program. In order to ensure that the random sample accurately represented the clinic's population, the demographic characteristics of the subjects included in the sample were compared with those of the 250 other clinic patients in terms of sex, age, education, marital status, length of addiction, employment, etc.

The selected subjects were quantitatively divided into two groups, on the basis of their level of addiction to hard drugs. This level was determined in reference to the continuation or cessation of use of illicit drugs (mainly heroin) in addition to the methadone prescribed within the framework of the program at the clinic. Group I included 15 'hard-core addicts', and Group II consisted of 10 'drug addicts'. The aim of this quantitative division was to test whether, and to what extent, this division would also reflect the level of "meaning of life" of the subjects.

Our assumption was that the degree of addiction is a direct function of the "meaning of life" level, rendering its level an indicator to the withdrawal and rehabilitation chances of drug addicts.

All 25 subjects were individually interviewed three years ago, at which time each one completed three questionnaires related to various aspects of "existential meaning"

according to the above mentioned definition. A detailed anamnesis was taken, as well.

The questionnaires are described below:

1. An experimental test which was specially compiled for this study, on the basis of Anderson's (1981,1982) Information Integration Theory (IIT). This theory provides an experimental factorial design that enables the analyst to fathom the characteristics of the subject's cognitive and affective disposition under a certain theme, by asking him to point out aims, purposes, thoughts, feelings etc, for other people.
2. A test of "existential meaning" as a personal pre-disposition. The Purpose in Life (PIL) Test of Crumbaugh, J.C. and Maholick, L.T. (1968) is an attitude scale, founded on Frankl's orientation. In practical terms, this questionnaire is a personality test intended to reveal the degree of "existential meaning" in the subject's life.
3. The Life Regard Index (LRI) of Battista, J. and Almond, R. (1973), provides a life regard scale that enables measurement of a positive life regard and negative life regard.

Following cross validation of the above three questionnaires, it was found that this battery of tests is capable of serving as a valid indicator for determining the

level of the subjects' "existential meaning" according to the operative definition formulated for the purpose of this study.

Follow-up procedures were carried out on the 25 subjects during the past three years. Each subject received the same treatment at the clinic:

1. Pharmacological (methadone) aid - in the individually relevant quantities.
2. Twice monthly, urine tests designed to eliminate the use of illicit drugs.
3. Attendance at individual (occasionally accompanied by family members) once-a-week psychotherapeutical session based on the logotherapy method.

In order to examine whether "existential meaning" can be used as a predictor for the withdrawal and rehabilitation of heavy drug addicts, and in order to discover whether the battery of tests that was submitted for this study can be used for the differential diagnosis and withdrawal prognosis of heavy drug addicts, we examined the subjects after a three year follow-up period according to the below listed criteria, based on the "Measuring Success Scale", of Ben-Yehuda, N. (1981)

1. Abstinence from non-methadone, illicit "hard drugs" (i.e. heroin, opium, amphetamines, barbiturates).
2. Amount of methadone in milligrams consumed daily (the less, the better).

3. Regularity and consistency of attendance at psychotherapeutical sessions.
4. Illegal activity before and after enrollment in the study.
5. Employment patterns, in terms of consistency, continuity, duration, type, legality and income level as well as resort to welfare aid.
6. General functioning within the family and society.

The hypotheses of the study with regard to the link between "existential vacuum" and addiction to hard drugs were fully confirmed by each index, individually and in conjunction with one another. It was found that the group of hard-core addicts was characterized by a present life perspective only, and showed a great deal of "existential vacuum" while the group of drug addicts showed future time perspective (FTP) as well as other features of "existential meaning". In addition, a link was found between the subjects' initial level of "meaning of life", their final degree of addiction, and the benefit they derived from the logotherapy.

Inter alia, we discussed the theoretical and methodological limitations of the study's findings and assessed the ability to use instruments such as those used in the present study for the sake of a differential diagnosis of heavy-drug addicts with regard to their degree of "meaning of life" and thus to their chances for withdrawal and rehabilitation.

I N T R O D U C T I O N

F o r e w o r d

"To be a hard-core drug addict means to be one of the walking dead... The teeth rot, appetite disappears, the stomach and intestines do not function properly, the gall bladder becomes infected; the eyes and skin take on a dirty yellowish tinge; in some cases the nasal discharges turn an infected reddish colour; the wall between the nostrils erodes, and it is difficult to breathe. The quantity of oxygen in the blood declines; bronchitis and tuberculosis develop. Good character qualities disappear, and are replaced by bad traits. The genitals are affected. The veins are destroyed, leaving dark purple scars. Pus-filled blisters and sores attack the skin; pulsating pain tortures the body. The nerves collapse; dangerous deformity ensues. Imaginary fears and illusions damage the brain, sometimes leading to insanity. Death often comes early... This is the torture of drug addiction; this is the plague of those who are part of the walking dead..."

(Report of the United States Supreme Court, 1962).

In spite of the reality described above, the awesome ranks of drug addicts are joined each year by many people

throughout the world. According to Police and Ministry of Health reports, there are currently approximately 15,000 or more people in Israel who are addicted to hard drugs. Some 2,500 addicts are registered at "Medicate" Drug Addicts Treatment Center in Tel Aviv. In the course of an extended period of practical work at the center, it was found that of the total number of those treated there, only some 250 are aware, at least partially, of their true condition and display willingness to change it. The remainder willfully forfeited any effort to deal with their problem, and all that remained for their counsellors to do, no matter how cruel and almost inhuman this may sound, was to let them slide to their death in the most "decent" manner possible. On the face of it, it appears that the addicts who "surrendered" live in a situation of absolute existential vacuum, and in practical terms are occupied exclusively with obtaining drugs and all associated activities. On the other hand, it is evident that those who are motivated to change their condition have existential meaning, or are at least prepared to search for such meaning.

An operationalization of a main corollary of Frankl's theory (1958, 1960, 1966, 1967, 1968, 1981, 1982) was made in the present study according to which the link between "existential vacuum" and addiction to hard-drugs (particularly narcotic drugs) was methodically examined. Likewise, the difference between drug use and drug addiction was reviewed, as were other approaches to the problem of addiction.

DRUG USE AND DRUG ADDICTION

Definitions

Since the middle of this century, when drug abuse became one of the major problems of modern society, discussions of the subject have proliferated not only among professionals in the various disciplines, but also among the population at large. The press and other media, as well as laymen who have dealt with the subject, have engendered conceptual confusion about all aspects of use of the various drugs, and to this day, the major problem in discussing the subject of drugs in the public arena is the inclusion of all drug users under the one roof, while in practice there are essential differences between the various categories of drug users, types of drug use, effects of the various drugs, and their withdrawal symptoms. It is only in the past two decades that some researchers, mainly under the guidance of the World Health Organization (W.H.O.), have published concrete definitions of the various drugs, how they are used and their withdrawal symptoms.

Generally speaking, a **drug** is defined as "any substance which, as a result of its chemical composition, causes changes in the structure or functioning of a living organism" (Ben-Yehuda, 1982).

A **psychoactive drug** is "any substance which is capable of changing individual performance and behaviour, by

creating functional or pathological changes in the central nervous system" (Ben-Yehuda, 1982).

Drug abuse "refers to use, usually by giving a drug in a manner deviating from the accepted usage norms - either medical or social - of the drug in a given culture" (Jaffe, 1975).

Tolerance: The need of those addicted mainly to narcotics to constantly increase the drug dosage, in order to achieve a result similar to that when they just began to use it. Narcotics cause high tolerance levels, within a very short time (Berman, 1971).

Physical Dependency: The repeated use of certain drugs causes physical dependency, i.e. a form of adaption, in which the body learns to live with the drug (Berman, 1971).

Psychological Dependency: This means that the addict not only likes the feeling created by using the drug, and longs to experience it repeatedly, but he also feels that he is unable to function normally without it. This habit allows him to escape from reality and his problems and frustrations. The drug and its effects give him a prima facie answer to all his problems, including disappointment and boredom. This psychological dependency causes addicts who withdraw from physical dependency on a drug to resume using it (Berman, 1971).

Addiction: According to the World Health Organization definition, addiction is a state of temporary or chronic poisoning, as the result of repeated use of a drug, involving tolerance, physical and psychological dependency, and a strong compulsion to continue to use the drug, in spite of its negative effects on both the addict and society.

Habit: Defined by the World Health Organization as a state which is the result of repeated use of a drug, with either no or very slight indications of tolerance, accompanied by psychological dependency but with no physical dependency, and a desire (but no compulsion) to continue to use the drug because of the feeling of well-being it promotes.

Drug Dependency: Over the years, the terms "addiction" and "habit" have been used without any distinction between them. This erroneous usage has resulted in the incidence of linguistic difficulties in discussions of the drug issue. Accordingly, the World Health Organization has recommended that these terms be replaced by a single, more general term - "drug dependency". "Drug dependency" is defined as a state arising from the repeated use of a drug on a temporary or permanent basis. Since numerous different types of drugs come under the category of drug dependency, the term is customarily defined according to the specific drug being used.

In actual practice, the term "drug dependency" has not succeeded in replacing the terms "addiction" and "habit", which appear in the text of international and local legislation regarding potentially harmful drugs. It is reasonable to assume that in the future these three terms are likely to become part of the terminology related to drug use, with the term "drug dependency" preferred by those with a medical orientation and the terms "addiction" and "habit" used by the legal profession and law enforcement agencies.

TYPES OF DRUGS AND THEIR EFFECTS

In the professional literature, it is customary nowadays to divide drugs into four categories: (1) Hallucinogenics, (2) Stimulants, (3) Sedatives or tension relieving drugs, and (4) Narcotics.

1. Hallucinogenics:

Hashish, which is made from the sap concentrated in the flowers and leaves of the Cannabis Sativa plant, grows in the Middle East, India, Africa, Mexico and recently also in several southern states of the U.S.A. It appears under several names: in northern African countries it is known as "kef", and in U.S.A. as "pot", "grass" or "green". It is sold wholesale in "soles" weighing approximately 200 grams, and the quantity sold to the retailer is called a "finger". Hashish is considered a mild hallucinogenic and according to United Nations publications it is now used by some 200

million people throughout the world. In Israel, according to Ministry of Health and Police reports, about 6% of the population uses hashish. The physical effects of hashish are: accelerated heartbeat, reduction in body temperature, loss of fluids, drastic changes in the body's sugar levels and a consequent abnormal craving for food, particularly sweet foods. Other effects are lack of physical coordination and the inability to perform acts requiring simultaneous reactions. In emotional terms, hashish generally affects moods. It causes loss of awareness of time, distance, height, colour and sound. It affects judgment; persons under the influence of this drug are easily lured by any offer, even those which are contrary to their personalities and opinions. They tend to commit crimes, or bold acts, which may endanger their lives. Taking particularly large quantities of hashish also causes fantasies and delusions, the senses become confused, and euphoria and enthusiasm are likely to be followed by severe depression accompanied by anxiety and feelings of total helplessness.

Since hashish is a social drug, the intellectual level and expectations of the group of users determine the nature of its effects. Participants in groups with high intellectual levels may sense "clarity of mind" and a different understanding of the world. Young people who suffer from feelings of discrimination may feel exaggerated self-confidence and a feeling of omnipotence. Primitive persons, who lack 'joie de vivre', are satisfied with the

well-being and euphoria related to attacks of laughter for no reason whatsoever (Ben-Amnon, 1980).

Hashish is not addictive. There is no compulsion to use it whatever the cost, and the body develops no tolerance of it. In addition, ceasing to use hashish does not involve the withdrawal symptoms characteristic of narcotics. Nevertheless, most researchers agree that persons who find it difficult to tolerate reality, and discover that with the aid of hashish they can free themselves of their anxiety and "move" to a more peaceful and comfortable world, may develop psychological dependency on this drug.

Marijuana is a weaker drug than hashish, since only the flowers and fresh leaves of the Cannabis Sativa plant are used to produce it, and not the sap concentrated in its flowers and leaves. In practical terms, marijuana is similar to hashish in all other characteristics. It also causes temporary hallucinations and particularly heightens sensitivity to colour and sound, and it is also not addictive.

LSD (Lisergic Acid-Diethylamide) was developed in 1938 by Dr. Hoffman, whose objective was to produce a powerful stimulant for the central nervous system. Hoffman later discovered its hallucinogenic properties. LSD originates from a mushroom which grows in the stems of rye. It is taken in the form of tablets, crystalline powders, a colourless liquid, or cubes. It is generally taken orally, but can also be injected. LSD affects the central nervous

system, and is accompanied by external symptoms such as dilated pupils, shaking, and increased body temperature and blood pressure. LSD causes changes in perception. Colours take on different hues and change rapidly, giving great pleasure. Shapes become distorted and seem to come alive and become emotionally meaningful. LSD causes high sensitivity to voices and sounds, which softly and pleasantly move ever closer from endless distances. Little by little, the LSD user stops feeling his body, and seems to be floating in space. Time becomes irrelevant and either stops completely or flows quickly, and the user begins a kind of voyage into the depths of an inner world of uncontrolled thoughts, which promote a feeling of euphoria and total release. This state is known by the "prophets" of the drug as a "trip", or "expansion of the conscious". However, many users have also experienced a nightmarish trip filled with anxiety, impulses to commit suicide, illusions of persecution and imaginary fears that they were victims of plots (Ben-Amnon, 1980). LSD, like the other hallucinogenic drugs mentioned, is not by definition an addictive drug. It does not create physical dependency, nor is the psychological dependency strong, and there is no compulsion to obtain it at any cost.

Other hallucinogenic drugs, which are similar in effect to LSD but which are far less common, are Psilocybin, which is made from mushrooms found in Mexico, Dimethyltryptamine (DMT), which is produced synthetically from several plants which grow in South America and western India, seeds of the

morning glory plant, STP and Mescaline, which is made from peyote.

2. Stimulants:

Cocaine: Made from the Erythroxylon Coca plant, which grows in the sub-tropical area of the Andes. It is used by chewing the leaves, which is common even today among South American Indians. By this method, the effects of the drug are relatively mild and short-lived. On the other hand, cocaine in the form which is now common in the Western world, in the form of an odorless white powder with a strongly bitter taste which is taken by inhalation, orally or by intravenous injection, is a highly powerful stimulant. It immediately causes high spirits, which simultaneously repress feelings of hunger and thirst, and eliminates the phenomena associated with fatigue. Users feel unusually potent and believe that they can use their talents however they wish. However, prolonged use may cause total physical and mental breakdown. In terms of defining addictiveness, cocaine use does not involve physical dependency, but there is a reasonable possibility of psychological dependency, because after halting cocaine use, the user suffers anxiety attacks accompanied by delusions of a paranoid nature.

Amphetamine, which is a drug that stimulates the central nervous system, is also known by the names **Novydrine**, **Benzedrin** and **Maxiton**. Initial attempts at using it were to relieve mild depression and the chronic fatigue associated with aging. It reduces appetite and was therefore also an

easy means of losing weight. Its use is particularly common among students, who found that it gave them a feeling of clear-headedness and lack of fatigue. Taking amphetamines does not lead to physical dependency, and ceasing its use does not give rise to the usual withdrawal symptoms, although stopping use of the drug causes over-exhaustion, fear and severe depression. It is nevertheless worth noting that in some cases psychological dependency was discovered, along with a strong compulsion to continue to use it, particularly in those taking it intravenously as opposed to the taking of tablets (Ben-Amnon, 1980).

Other noteworthy stimulants include **Methamphetamine**, which has potent, long-lasting effects; **Preludin**, which was also first produced as a weight loss drug, but those taking it showed indications of tolerance and the withdrawal symptoms associated with it are severe, accompanied by hallucinations and delusions of persecution by people around them, who "become hostile". Likewise, there is **Methyphenidate**, which is also called **Lidepran** or **Ritalin**. Although its effects are milder than the drug mentioned previously, exaggerated use may nevertheless cause tolerance and consequently withdrawal difficulties, accompanied by severe depression, fears, hallucinations and delusions.

3. Sedatives:

These drugs are made from barbiturate acids. The most common are **Valium**, **Doriden**, **Restenil**, **Meprobronnate** and **Prodormol**. When use of these drugs first began at the turn

of the century, they were intended for medical use only. However, since the sixties they have been abused, and extremely severe cases of addiction have been discovered. Although a small quantity of barbiturates has a relaxing effect and relieves tension and anxiety, a large quantity is stimulative and causes a condition of intoxication, similar to that resulting from drinking alcohol. Under the influence of large quantities of sedatives, the user finds it difficult to walk, all movements lack coordination and whatever he says is meaningless. Abusers of this drug become hypersensitive and react with outbursts of anger to any real or imagined sight. The effects of the drug may continue for 24 hours, but after the effects disappear there may be negative reactions, which are similar to, or even more severe than the withdrawal reactions from narcotics. People who are enslaved to barbiturate use rapidly deteriorate drastically, both physically and emotionally. They suffer from motorial difficulties, confused senses and distorted thought processes and emotional responses. Addiction to the drug occurs more rapidly if it is taken by injection, but tolerance also develops quickly when taken orally. Barbiturate addicts are unable to perform even the most simple tasks and since they need large amounts of money in order to obtain the drug, it is not surprising that many quickly become criminals (Ben-Amnon, 1980).

4. Narcotics:

The word "narcotic" originates from the Greek word "narke", which means sleep. This group includes Opium and

its derivatives: Morphine, Codeine and Heroin; and the synthetic Opiates: Merphidine or Xycodine and Methadone, which in Israel is called Adolan. All these drugs, according to their medical definition, cause insensitivity and cloud the senses, as the result of their effect on the central nervous system. They assist pain relief and while under the influence the user feels euphoric, with his entire world seeming perfect and worry-free.

Narcotics-use underwent lengthy, extensive processes before reaching its present state. Sociological and anthropological studies both in the West and East show that these drugs were also used in the past, and that the moment man discovered the plants which may relieve his suffering, the use of these drugs began.

Opium: Testimony in Accadian and Sumerian literature, as well as the opinion of Assiain, who lived in Mesopotamia in 1350 BCE, show that the first fields of poppies (*Papaver Somniferum*), from which opium is made, were located between the Tigris and the Euphrates. The Sumerians, who lived in about 3000 BCE, called the poppy the "happiness flower" and left documents about its unique properties. With the Persian invasion of Europe, the drug came to Greece, from where it spread throughout the Roman Empire. Arab traders took it from the colonies of the crumbling Roman Empire to India. In the eighth century, the drug was taken to China, where it claimed millions of victims. Until the 16th century, opium was taken by eating it or drinking it diluted in wine or milk. Opium smoking originally began in the West

and only spread to China later. In the 17th century, opium smoking in China reached such dimensions that two Chinese emperors outlawed its cultivation or use, but to no avail. By means of a network of smugglers, British traders succeeded in transferring enormous quantities of opium from India to China, culminating in the outbreak of wars between China and Britain, which came to be known as "The Opium Wars". However, the end of the wars saw the British gaining the upper hand. In 1858, the Tientsin Agreements were signed, guaranteeing full freedom to the opium traders. Presently, they no longer required smugglers, and opium trading became legal under government protection. Today, the people of Afghanistan, Burma, Pakistan and primarily northern Thailand are the biggest suppliers of opium to the U.S.A. and Europe, but only 3-7% of the opium produced is used for medical purposes (Encyclopedia Britannica, 1973).

Morphine, which is stronger than opium, was first discovered at the beginning of the previous century. It was made from opium by a German chemist named Serturmer in 1806. When Pravaz introduced the administration of medication by injection in 1850, morphine use began to spread. Morphine was used as a medication in the France-German War in 1870-1871, and immediately thereafter its mass use as a pain reliever began (Encyclopedia Britannica, 1973).

Heroin, which is the most active and addictive of all narcotics and which is also made from poppies, was first used in 1889 by Dreser, who believed that it could be used

as an addiction-free pain reliever. Dreser called it **Diaethyl-Morphin** (Ben-Amnon, 1980).

Thus the use of narcotics was for lengthy periods confined mainly to healing and pain relief purposes, but due to their unique properties they were also often used in religious rites and to reach states of ecstasy. In today's world, with all its characteristics - achievement-orientation, money chasing, anonymity, estrangement, lack of existential meaning and hedonism - narcotics abuse has taken on dimensions of perversion and criminality. It is no longer associated with a religious experience or pain relief, but is used to relieve severe frustrations which causes emotional disorders and serious defects in personality structures. Green (1983) writes that:

"In essence, the drugs affect the consciousness states of the individual, or in other words, moods.

With the drugs, it is possible to achieve illusions of a state, which does not really exist, of joy, happiness, well-being, power and release. These are the feelings which the drug gives users, at least at first. It creates the illusion that with this borrowed feeling it is easier for them to deal with all situations in life, ranging from social intercourse to finding jobs, in contrast to the concept that dealing with life, at least in Western society, requires an active, competitive, achievement-oriented struggle, with interminable efforts. Within the framework of the definition of

the active manner of dealing with life, the Western concept relates to man's ability to experience experiences without artificial chemical aids. For some drug users, this ability disappears, and one may thus find people who in order to hear music, or attend a cultural or social event require a specific dose of some drug or other, without which they will be unable to undergo a real experience".

Of the four categories of drugs, narcotics are considered the most dangerous, because of their high tolerance levels, which lead to addiction within very short times. The negative reactions during withdrawal are also extremely severe and may appear as soon as two hours after commencement of absence of the drug. After 24 hours, the reactions reach a peak and without medical supervision and intervention, may cause the death of the user attempting withdrawal.

According to Mauer and Vogel (1963), the withdrawal symptoms of narcotics are: depression, anxiety, emotional tension, progressively increasing loss of fluids, increased body temperature, dilated pupils, severe respiratory system disorders, defective heart functioning, hypertension, diarrhea, vomiting, nausea, increased perspiration and chills over all parts of the body.

Some researchers hold that drug dependency exists only when the addict personally experiences the pain associated with deprivation of the drug. For example, Lindesmith

(1947) argues that addicts encounter a vicious circle. They turn to the drug in order to experience the feeling of release the drug gives them, but they also quickly learn the severe suffering when it is not present and they then turn to the drug not so as to enjoy it but in order to escape from the suffering of deprivation of it. Isbell and White (1955) add that the anxiety over the suffering of deprivation of the drug is so dominant that it compels the addict to persist in his attempts to obtain it by any possible means, even though it ultimately involves changing his behaviour patterns and association with marginal society sectors. On the other hand, others such as Zehnder and Muhlerman (1974) treat the anxiety over the suffering of withdrawal as a merely secondary factor. They base their opinion on two known facts. Firstly, many addicts who have successfully undergone the detoxification process and are completely free of the physical suffering involved in deprivation of the drug, repeatedly return to the drug, and this, as mentioned earlier, in spite of the fact that they are quite familiar with the physical suffering involved in deprivation of the drug. Secondly, addicts who with the aid of medical treatment have succeeded in changing to synthetic substances such as methadone, which do not cause such severe withdrawal symptoms, prefer to resume use of the addictive drugs. Due to their unique chemical composition, the drugs give the addicts a means of escaping from reality, which in turn they need because of personality defects. The addicts are prepared to deal with the physical suffering, but are not prepared to forego the feeling of release from anxiety and emotional tension.

Methadone, which is known in Israel as **Adolan**, is a synthetic drug, which is capable of serving as a substitute for opiates. Daily use of methadone is likely to free addicts from all the torturous symptoms of the withdrawal processes.

The method of treatment with methadone was developed by Dole and Nyswader in New York in 1965, on the assumption that addiction to hard drugs stems from a metabolic disorder. In spite of the opposition to this treatment method (Ashley, 1972; Musto, 1973), mainly because of the fact that methadone is an addictive drug in itself, its advantages to most addicts have been recognized (Ben-Yehuda, 1981) and the current situation in the U.S.A. is that most ambulatory drug addict treatment centers have adopted the methadone treatment method, in conjunction with a variety of psychotherapeutic assistance. The major rationale behind adoption of the methadone method may lie in the fact that it is a legal drug substitute which is sold in drugstores in fixed dosages by medical prescription, or alternatively is dispensed under medical supervision at treatment centers for drug addicts.

"Methadone Maintenance... renders getting "high" throughout the use of narcotics difficult if not impossible... Methadone Maintenance means that... (the drug addict) is not subject every day to the rush of heroin or quinine, or the intermittent scheduling which enhances and reinforces the addictive patterns... Methadone...

although it maintains the addiction (to Methadone itself) alters the nature and form of it. Heroin and Heroin life requires of a man his whole and every waking thought and moment. Methadone properly administered and properly taken, reduces the patient's total commitment of his life space from the hunt for drugs to only a small and manageable proportion of it. The bulk of time he had previously devoted to the pursuit of the high of heroin, he can now turn towards the serious and effective pursuit of rehabilitation and a renewed life style. He can re-formulate his family and social relationships, he can look forward again, or for the first time, to the possibility of a future and a life style that includes achievement, success, career, acceptance, respectability and responsibility." (Scher, 1972)

USE, ADDICTION AND WITHDRAWAL

From the review of the various drugs and their effects on the users, it is already possible to distinguish between drug use and drug addiction. The concrete difference becomes even clearer on the background of examination of types of drug users and the manner in which the drugs are used.

Gorsuch and Butler (1974, 1976) divide drug takers into three groups, in order to distinguish between the three states of use, addiction and withdrawal: (1) Unwilling

users, as the result of taking drugs in the course of medical treatment. (2) Users who have not undergone socialization to the accepted norms of a given society. (3) Users who have undergone socialization to a sub-culture which supports drugs. Regarding the first group, the initiative to use drugs is explained by the fact that the user was first given drugs in the course of medical treatment. The continued use of the drug, i.e. the addiction to it, is also a result of the need to continue the medical treatment. According to the writers, it may be assumed that users in this group may at a later stage change to use of illegal drugs and may attempt to obtain independent sources of supply of drugs, not necessarily through the medical institutions. For members of this group, withdrawal from drugs takes place by an orderly detoxification process, parallel to the cessation of medical treatment. As for the second group, the initiative to use the drug is perceived as a result of a defective process of socialization, problems in family relations, feelings of physical or emotional pressure, the presence of models for imitation who take drugs, the need to search for adventure and undeveloped abilities to form interpersonal relationships. Unlike the members of the second group, members of the third group, who have undergone a process of socialization to drug use, develop a feeling of belonging to the extended family of drug users. Moreover, the user also sees himself as part of a group of users who are more experienced than him. Physical or emotional pain, or the need to search for excitement, may contribute to commencement of use of the drug by members of this group.

Regarding the latter two groups, there is an identical set of factors which leads to addiction: an opportunity to obtain an inventory of drugs, fear of withdrawal, experiencing the positive effects and pleasantness of using the drug, its relief of tensions and the customary involvement of the sub-culture of drug users. For them, withdrawal is also associated with various interactive factors, such as lack of supply of drugs, changes in values, changes of members of the group, a strong desire to leave the drug "scene", and a positive outcome of the medical withdrawal process.

A committee of experts appointed by President Nixon in the U.S.A. (according to Ehrenfeld, 1975) distinguished between five main forms of drug use: (1) Experimental use, resulting from curiosity, with minimal risks. This form of use is characteristic of a broad sector of the population, since it is a type of "fad". After trying, the drug curiosity is generally satisfied, and use of the drug is not continued. (2) Social or recreational use. This form of drug use is different from the previous form in that the social situation is more organized and consequently there are inherent risks of repeated use under pressure of the organized group. (3) Circumstantial or situational use, which is typical of people who take drugs in order to enhance or improve their performance in various fields; such people are students who take stimulants the night before exams, or truck drivers who want to stay awake at night while driving long distances. Repeated use of the drug is highly dangerous, because the users are motivated by the

desire to feel and behave under the influence of the drug. (4) Intensified use, which is expressed by progressively increasing dosages, as a result of the need to suppress pain or improve moods, and which is commonly used as self-administered treatment. Functional problems may arise as a result of high doses in short periods, which then endangers the individual and society. (5) Compulsive use, which is characterized by the inability to stop using the drug. This state is the result of an emotional desire for protection by means of the drug and from the fear of the withdrawal symptoms which would appear in its absence. There is very high danger to the individual and society.

In practical terms, only compulsive use characterizes drug addiction. Nevertheless, drug addiction is not necessarily the final phase of the sequence of drug use. Only a small proportion of drug users have a predisposition to addiction, which will make them true narcotics addicts.

The present study does not deal with the population who **uses drugs** in order to rise above daily life, or in order to achieve states of ecstasy. It does not deal with those people who were described by Huxley (1954-1963) as estranged from religion and who, instead of seeking release "from above", from what he defines as the spiritual and eternal world, they seek release of their selves "from below", from the material and mortal world. It does not deal with those who are led by the primal drive to flee from pain to drugs, for whom drugs are the prime source of pleasure and for whom drugs provide satisfaction in the face of suffering

and peace in the face of anxiety. In contrast, the present study examines **narcomaniacs**, i.e. **those addicted to hard drugs, particularly narcotics**. People who have developed physical and psychological drug dependency. People who feel a compulsive drive to use the drug repeatedly and to obtain it by any means. People who, as Greeves (1974) holds, use drugs as a prime source of pleasure, and not only, as temporary users regard them, as one of many potential sources of pleasure.

THEORIES OF ADDICTION TO HARD DRUGS

In principle, the theories dealing with addiction to hard drugs can be divided into the following categories: biological theories, sociological theories, psycho-sociological theories and psychological theories. In actual fact, in spite of the significant differences between these theories, each in its own way holds that there is some kind of set of predispositions to addiction to hard drugs, so that in the final analysis they are all characterized by a deterministic approach to the subject.

Biological Theories

The biological theories view addiction to hard drugs as a function of the biological structure of man. Man's innate biological structure, regardless of his personality or the circumstances of his life, is the cause which is responsible for the phenomenon of addiction to hard drugs. The difference between the approaches is in practice expressed

exclusively in the selection of one or another biological factor which is perceived to have a more dominant effect on addiction. Thus, for example, Beyerot (1972) sees addiction as a purely neurological problem. He believes that addiction to hard drugs is nothing other than an artificial means of obtaining immediate satisfaction of a basic need to remove limits and for euphoria, motivated by stimulation of the pleasure centers of the brain. Weil (1972) also hypothesizes that hard drugs are a means of dealing with the occasional passion to change consciousness. According to Weil, this is a normal, innate drive, analagous to hunger or sexual drive, and the root of this human drive lies in the neurological networks of the brain. Thus the question arises, if it is a "basic need" or "normal drive", then why is the phenomenon of addiction not common among greater sectors of the public?! Does the addict's character, or even the availability of drugs, truly play no role in addiction?! It is interesting to note that Weil (1972) himself, in discussing withdrawal from hard drugs, emphasizes the social pressures and opportunities for alternative behaviour, which are suited to the addict, in order to overcome his problems.

The deterministic concept of the biological approaches is also dominant in the bio-anthropological theory of Jonas and Jonas (1977). This approach shows addiction to hard drugs in terms of natural development processes and focuses on the effect of the concentration of a person's genes on his addiction. They hold that someone who is addicted to hard drugs has a specific genetic arrangement which makes

him hypersensitive to excitement, social signs and, most of all, commonality. They explain the addict's difficulties with interpersonal relationships as a state of dysphoria, resulting from overcrowding and overloading of social excitement. Of course, this approach leaves no opening for discussion of withdrawal.

Dole and Nyswander (1967) see addiction to hard drugs as a result of an undefined metabolic deficiency. They assume that only people with a deficiency of this kind are susceptible to addiction, since they experience euphoria by means of narcotic drugs, in contrast to the feelings of revulsion experienced by others who try to use those drugs. They also speak of withdrawal from drugs by means of treating the metabolic deficiency with methadone. From practical experience in hard-core drug addicts (Connor & Kramer, 1971), it was found that methadone indeed aids the physical withdrawal process, but yet is by no means the only cure for long-term drug withdrawal, since by the very definition of the term addiction, the problem cannot be treated merely as a matter of physical dependency.

It may be said that in spite of the important contribution of the biological theories to understanding the problem of hard drug addiction, they reflect merely the tip of the iceberg of the real problem - the problem of a person who is addicted to hard drugs, who lives in a specific environment and who in addition to biological systems also has psychological and spiritual systems.

Sociological Theories

Among the sociological theories of addiction to hard drugs, the two main schools of thought may be distinguished. The one sees addiction within the framework of macro-society, while the other sees the phenomenon as the problem of the individual within the framework of his micro-society, i.e. within the framework of his immediate environment. The representatives of the former school of thought base their approach mainly on the ideas of Durkheim (1936), who developed the theory of social anonymity, and interpreted the suicides during his time as the culmination of a sequence of self-destruction originating from the reaction of the individual to the strangeness of society. His successors, Merton (1957) and Cloward and Ohlin (1960), as well as Stengel (1964) and Mizra (1976) argue that whenever there is a discrepancy between the objectives of the individual and his means of achieving them, he is liable to feel feelings of failure, anonymity and estrangement, and consequently to develop regressive behaviour, which means rejection of the achievement-oriented objectives of the society and rejection of the legitimate means of achieving them. One expression of this deviant behaviour is, they believe, addiction to hard drugs.

Conspicuous among the representatives of the second school of thought is the approach of Sutherland (1960) to differential formation. In his opinion, the deviant behaviour of drug addicts stems from over-exposure to

deviant values, which exceeds their exposure to non-deviant conformist values. Lindesmith (1947), Auich (1966) and Paschke (1970) do not mention deviant values, but explain addiction to hard drugs as a result of the influence of close friends and the influence of "the street", which serve as a refuge from a disappointing, hurtful family, as well as of the availability of drugs. In many respects, this approach emphasizes the cognitive behaviour of the addict. They hold that a drug user becomes an addict when he recognizes his dependency on the drug and becomes involved in the sub-culture of the addicts. Other researchers (Chein and Rosenfeld, 1957; Chein, Gerard, Lee and Rosenfeld, 1964; Chein, 1966; Khantzian, Mack and Schatzberg, 1974) add that addiction to hard drugs becomes a way of life and allows the addict to identify with and feel part of a sub-culture which accepts him with minimal demands. Addiction offers him a "career" in which he can be more or less competent and express the anti-normative acting out with his behaviour. In this context, Blachly (1970) submits a "temptation model" which he believes characterizes not only drug addicts, but all tempting and destructive behaviour, such as smoking, suicide, sex crimes, gambling, risk taking, alcoholism and stealing. In his opinion, all of these behaviours are characterized by four main features: (a) active participation by the victim in victimizing himself; (b) negativism, i.e. a person engaging in a certain type of activity while being aware of the negative effects likely to result from that activity; (c) a real opportunity to profit in the short term; and (d) awareness of the concrete danger of punishment.

Thus the sociological theories of both schools of thought attempt to explain the phenomenon of addiction to hard drugs as a function of social forces. However, even if there is no doubt that a person's social environment has a strong effect on his way of life, without relating to the other systems that determine his behaviour, such as the biological, psychological and spiritual systems, we would arrive at the absurd conclusion that most people living in a certain social system will reach a stage of addiction to hard drugs. Clearly and obviously, no such conclusion can pass the test of reality. Even among low socio-economic sectors, addiction to hard drugs does not reflect the total population. In all cases, hard drug addicts constitute only a tiny proportion of the social strata to which they belong.

Socio-Psychological Theories

Many articles dealing with the subject of addiction to hard drugs present a socio-psychological approach, i.e. viewing the individual's addiction to drugs as a function of both his psychological and social problems. Thus, for example, Ausubel (1961, 1964), Wahl (1967), Wurmser (1972, 1974) and Milkman and Frosch (1973) see addiction both as a means of dealing with defective emotional functioning (such as personality disorders, weak ego, inability to delay gratification, dependency, insecurity, defective sense of responsibility, immaturity, low self esteem, tension, anxiety, depression, hostility or marginal schizophrenia), and as a means of dealing with social disorders in

interpersonal relationships (such as peer group pressure, acceptability of the drug in society, etc).

Van Dijk (1971) submits an interactive approach to addiction to hard drugs. He lists four types of vicious circles in the addiction process, from which it is impossible to break out: (a) Pharmacological - the use of the drug causes metabolic changes (tolerance, withdrawal syndrome), which heighten the individual's need for the drug. (b) Weakening of the ego - the drug may impede or alter the brain functions which regulate use of the drug, thus weakening the ego and resistance to using the drug, as a consequence of which use increases. (c) The social circle - addiction to drugs leads to negative social results (abandonment by family, friends and employers), and the individual slowly adopts the social function of "being addicted", and receives several reinforcements as a result of his identification with the sub-culture of addicts. This identification merely reinforces his addiction. (d) The emotional circle - which is characterized by intensification of feelings of guilt and shame, regressive and infantile behaviour and the loss of control of the principle of pleasure.

Any interactive approach similar to that of Van Dijk (1971) is no doubt more exhaustive of the problem of addiction to hard drugs than any other approach which deals with only a single central dimension of man's life. However, even this approach is deficient in that it ignores

the cognitive dimension and the spirituality of the hard drug addict.

Psychological Theories

Among the psychological theories dealing with addiction to hard drugs, two main streams are prominent: One stream is the psychoanalytic stream, which is based on Freud and his followers, while the other stream consists of a complex of other non-psychoanalytic theories.

A. Psychoanalytic Theories

Freud (1913, 1920), the father of psychoanalytic theory, views addiction to hard drugs as a phase in a sequence of self destruction. The inclination to self destruction is a result of aggressive impulses originating from the actual conflict between the will for love and the will for destruction; between the will to live and the will to die. Instead of finding expression externally, these aggressive impulses are directed inward, to the "ego" itself. Freud held that the behaviour of a hard drug addict is the result of the defective psycho-sexual development of his personality, and for him constitutes a form of substitute for the sexual gratification and masturbation which he lacked in the process of socialization.

Menninger (1938), a student of Freud, holds that the self destruction aspect actually consists of three basic elements: (a) The desire to kill, which according to

Freud's approach stems from aggressive impulses which for various reasons are not directed against the external object, but against the "ego" itself. (b) The desire to be killed, which is a radical expression of surrender and masochism, which is understandable on the background of the satisfaction of being punished in order to appease the conscience. (c) The desire to die, which explains the fatal suicide. The severity of the destructive behaviour depends on the strength of the will to destroy-die on the one hand and the weakness of the will to live on the other hand, and is graded as follows: (a) self destruction - suicide; (b) slow self destruction (chronic suicide), dependency on alcohol and drugs, psychoses; (c) tendency for accidents and self-maiming; (d) psychosomatic diseases - organic suicide. Thus according to him, the motivation for self destruction should be looked for in the mind, in the sub-conscious, in the development and personality of the person. As for the external environment, Menninger argues that "everyone makes his own environment to a certain extent", and it merely arouses the internal impulses, or serves as justification for their expressions. In this regard, Anna Freud (1977) adds that most people manage to achieve the proper equilibrium between their impulses and the demands of society by suppressing forbidden impulses, or by finding release for them according to socially acceptable norms. In times of failure, the "ego" unconsciously activates other mechanisms: we deny responsibility by "imposing" the blame on others or by purportedly "rational" justification, and not infrequently by "denying" reality. Those who fail to achieve equilibrium by means of these

defense mechanisms may, as an alternative, use a drug, thus securing at least the illusion of peace of equilibrium. When the effects of the drug wear off, they return once again to their internal conflict and tension which they find difficult to bear, and which is the source of the compulsive need to resume use of the drug. In this way, the longing for equilibrium and peace leads to addiction (Kulchar, 1980).

Rado (1913, 1933), another student of Freud, raises the possibility that addiction to hard drugs is an expression of oedipal dependency and regression to an early stage of family relations. He describes the phenomenon as a narcissistic disorder, and points to the bold link between disorders in the sex lives of people who are struggling with sexual impulses that are against accepted social norms. In tests he carried out, he found that most addicts were closet homosexuals. Fort (1954) supports this idea and adds that heroin, for example, weakens sexual drives, and thus removes challenges to prove masculinity. In this regard, Savitt (1963) adds that injecting drugs is perceived by the addict as returning to a state of intra-uterine feeding. He stresses the para-oral character of the drug addict, his weak ego, emotional immaturity and inability to delay gratification.

To summarize the psychoanalytic theories, it may be said that the overwhelming majority see hard drug addicts as neurotics on the border of psychosis. According to them, addicts turn to drugs in order to "defend" themselves from

the disease which is threatening their personalities. Strong primitive aggression and sadistic impulses fill them with anxiety, and by means of the drugs they achieve sadistic fantasies, through which they are able to control their aggression and suppress their guilt feelings (Glover, 1939, 1956; Zubin and Hoch, 1964; Coleman, 1964). There is no doubt that the psychoanalytic theories are an extremely important conceptual element in analyzing the problem of addiction. However, in regard to the practical treatment of hard drug addicts, it is patently evident that childhood traumas, the oedipal complex, and "id-ego-superego" conflicts are only a small part of the reasons for addiction to hard drugs. Only a minority of neurotics on the border of psychosis found a solution to their problem in addiction to hard drugs. The reasons for this probably lie in examining the total system of the person; a system which includes all dimensions of his life.

B. Other Theories

Among the non-psychoanalytic theories, the developmental theory of Adler (1910) has the place of honour. This approach views the family constellation, and the social conditions in which the person grew up and developed, as causes of an inferiority complex and, as a consequence, of incessant longing for security. In his opinion, the family of a drug addict generally constitutes an unstable environment and prevents emotional maturity. The mother is usually over-protective or neglectful and the father is apathetic and remote. The relations between

family members are extremely poor and unstable. Since the hard drug addict is unable to achieve emotional maturity, and is unable to delay satisfactions, he constantly attempts to maintain his infantile way of life, and he expects others (or drugs) to satisfy his needs immediately. He suffers from low self esteem, and is incapable of dealing with the tasks of life. To summarize, it may be said that Adler attributes to the inferiority complex and desire to revenge the environment to a real or imagined lack of attention, the major cause of addiction to hard drugs.

Adler's successors developed the theory of the link between the family process and addiction to hard drugs, and it is interesting to note here several approaches to this subject. For example, Stanton (1977) argues that the hard drug addict becomes the receptacle of the pain and chaos of his family. The image and behaviour of the drug addict are perceived as atonement for the sins of the whole family. He becomes suicidal in the sense that martyrs are suicidal, and his addiction becomes vital for the maintenance of the wholeness of the family. Seldin (1972) holds that the family dynamics of the addict also causes him to develop a defective attitude toward his functioning as a husband and father, as a result of which the family dynamics will also be repeated, in his view, in the family of the hard drug addict after his marriage. Steffenhagen (1974) writes that the drugs serve as an excuse for the addict's failures in interpersonal relationships, sexual functioning and his attempts to overcome his inferiority complex. They contribute to his avoiding the assumption of responsibility,

parallel to engendering the feeling of power and self value. The writer nevertheless argues that although drugs usually serve as a means of avoiding interpersonal problems, addicts usually actively attract others to use drugs as well, this also in the hope of achieving increased social recognition and security.

Another explanation of the phenomenon of addiction to hard drugs is proposed by The Theory of Learning. For example, Wikler (1953, 1965, 1973) argues that classic and instrumental conditionings are the basic mechanisms which explain the behaviour of addicts. The external conditioning is expressed in terms of the personality of the addict by his seeing drugs as anxiety relievers. In social terms, the external conditioning is expressed in availability of the drug, and the social recognitions it receives. According to Wikler, withdrawal from drugs can be achieved by classic external conditioning, by means of removing the availability of drugs, social reinforcement and relieving boredom, and by internal conditioning of the limbic system, in the context of non-creation of homeostatic need for the addict to continue to use the drug, i.e. reducing the excitement by gradual withdrawal. In other words - administering a substitute drug, which is not necessarily addictive and the physical and mental effects of which are less dangerous. Crowley (1972) explains addiction to hard drugs in terms of positive reinforcements (e.g. the pleasant effects of the drug), and negative reinforcements (e.g. the fear of the pain of withdrawal).

In principle, the psychological approaches are no different from other approaches presented in this chapter, since they also assume the existence of a certain predispositional system to addiction, and they are all characterized by a deterministic approach to the subject. In practice, none of the theories mentioned takes into account the spiritual dimension of man, his grappling with the existential problems typical of our times, as a person with freedom of choice. This lacuna was recently rectified in the teachings of Frankl (1958, 1960, 1966, 1967, 1968, 1981, 1982) - logotherapy. However, before discussing this theory in the context of drug addiction, it is necessary to first review the background to its development.

THE BACKGROUND TO THE DEVELOPMENT OF FRANKL'S THEORY - LOGOTHERAPY

The scientific, socio-economic and cultural changes of the twentieth century undermined the foundations of the theory of guilt, repression and "id-ego-superego" conflict on a sexual basis. Parallel to the process in which the "identity crisis" assumed the status of the central conflict in human life, studies of the significance of life and the meaning of life began to spread. There are many references in the literature and culture which became common from the thirties onward, to the fact that the current severe distresses are: the estrangement, loneliness, loss of contact and continuity, loss of security of identity, and, above all, the loss of meaning. Since the thirties, a generation has matured which emotionally confronted the destruction of all logical, economic and political order. Confidence in the fairness and optimism of the ideologies of both the right and the left was lost. On this background, the theories of anonymity of Durkheim (1936) and Merton (1957) in their existentialist context, developed, as did the personality theories, which included the profound ability and desire for freedom as an integral part of the process of growth of the personality, and the need for meaning in life as part of human needs. Typical of these personality theories is that of Maslow (1953), who dealt with human growth potential, and included in his theory the expansion of the personal horizon and the ability to seek meaning and self actualization in the highest layer of the hierarchy of human needs. Similar to him in principle is

Allport (1955), who in developing the growth theory stressed the role of the meaning of life and the value of life as one of the stages of growth, in which self actualization and exploitation of potential have a special place.

The ideas of the first generation of existentialism and their popularization in literature and culture, particularly following World War II, were a relevant message for a world recovering from the emotional traumas of war, which found itself in an era of economic prosperity. Fromm (1958), for example, indicated how the development of culture had led to the growth of individuality. According to him, when someone comes to think of himself as a separate individual from others, and identifies himself as an exclusive being, he experiences loneliness. In previous eras, the church, state and family, etc. provided institutional barriers to the experience of loneliness. The technological and sociological changes led to the disappearance of fraternity and belonging. In the world described by Toffler (1972) in "Future Shock", "flight from freedom" from the terminology of Fromm (1958) appears. Excessive freedom causes anxiety and various forms of escapism, alcoholism, drugs, mystic cults, divorce, meditation, group sex, profound emotional experiences (such as various types of marathons) and nihilism - from the addiction to "freedom" of the flower children, to students in search of identity in the style of Marcuse in rebellion against the uni-dimensional man.

The existentialist movement of the fifties and early sixties dealt more than anyone else with man's being and the

problems of his existence as is in his subjective dimension. According to the existentialists, man as he sees himself, in his spiritual, experiential and subjective world, is the fundamental, decisive factor in looking at his being and understanding his world. The mortal need for reciprocity is in order to give oneself life with awareness of one's separateness and individuality. The concluding paragraph of Sartre's play (1947) "Behind Closed Doors" is "Hell is the other person", i.e. the only existential being is the individual. Others are limiting, restrictive and even repulsive. The self is incapable of feeling the subjectivity of the other, since the other is nothing but an object, a predicate which is not authentic to the consciousness of the self. Thus the existence of the other limits the freedom and self perception of the self, and vice versa. The result is, as mentioned earlier, that the interaction between individuals in society is a constant conflict, the contents of which are fear, shame, pride and repression. The existentialists saw the potential in the intra-personal dimension of man, and did not see his existence as being satisfied by the interpersonal dimension. This is the Sartrean conundrum presented in "The Revulsion" (1978) as an aspect of the basic reality of man. It is the "self" which comes into contact with others but remains the "self". The ability to experience the self in the eyes of the other means that the very act of his perceiving me makes me, the perceived, another person and an individual - perception of myself as a physical entity in the eyes of others. But who I am - only I can determine. These fundamental existentialist experiences give rise to

the enormous power of the awareness of freedom and freedom of choice, and above all, the responsibility and duty for authentic existence. Man's freedom is to create the possible for a specific person in a specific situation, as Heidegger (1927) says. Thus, even foregoing the right to choose is a choice; and surrender is also a choice (Camus, 1977). The questions an existentialist asks himself are: Who am I? What do I exist for? What justifies my existence? What gives reason to my life? The need to answer these questions, with freedom of choice, and with responsibility, is the key to the tragic fate of man. He did not choose the world, said Frankl (1968), he was "thrown" into it. He does not know the circumstances, nor is he responsible for them, but he must be the responsible one within the circumstances of the unknown, which are conditioned by him and which condition him. In this way, something will always be overlooked, man can never exploit all opportunities, he can never rest on his laurels. But he can always struggle, seek and strive, never to surrender. Man has the ability to change himself. The existentialists believe that the meaning of life can also be discovered by discovering the positive in the negative, and even by discovering the meaning in suffering - all this by means of exposing the inner forces. Thus the existentialist movement developed its world view from man's ability to be a creature of consciousness. From this consciousness also rise both the feeling of responsibility and the feeling of finality, the feeling of death and fate. According to the existentialists, time is perceived as something which is separated from nothingness only by the awareness of man's

self. Man is doomed to live his finality as a possibility. In other words, the existentialists include awareness of death as part of life, thus making death that which gives life meaning. Ipso facto, the opposite demonstrates the reason for being. The meaning of life is this ability to salvage every moment of existence from the feeling of nothingness.

On the basis of the above, and because of his disappointment with the psychological theories, which attempted to provide purportedly perfect explanations for every phenomenon, and following his personal experiences in Nazi concentration camps, Frankl arrived at his existentialist philosophy, which he called "logotherapy", and its motto, which he borrowed from the writings of Nietzsche, was "Anyone who has anything for which to live, can bear almost any how..."

PRINCIPLES OF THE THEORY OF LOGOTHERAPY

Logotherapy treats the meaning of life as a crucial function in human life. Finding or not finding "meaning in life" is, according to Frankl (1958, 1960, 1966, 1967, 1968, 1981, 1982) not the consequence of exclusively psycho-physical or social causes, but also of a personal resolution arising from noogenic⁽¹⁾-cognitive processes, which should be sought in the spiritual-humanistic dimension of man, and not in his emotional or conative dimension. To be human, according to Frankl, means to be aware and responsible, i.e. to be capable of reacting or responding to a given situation, with freedom of choice, which is the very substance of man's existence. "It is not our fears and anxieties which are important per se, but the attitude we adopt toward them, and this attitude is adopted as a free choice" (1982; p.55). Indeed, if there is a certain element of determinism in the psychological or physiological

(1) *'Frankl calls the human spirit also the 'noetic' dimension. The term is taken from the Greek Noos or mind. But Frankl uses the term to include everything that is specifically human. The noetic (spiritual), specifically human dimension contains such qualities as our will to meaning, our goal orientation, ideas and ideals, creativity, imagination, faith, love that goes beyond the physical, a conscience beyond the super-ego, self-transcendence, commitments, responsibility a sense of humour and the freedom of choice making' (Fabry, 1980; pp.18-19).*

dimension, then there is freedom in the human nooological (nooes - of the mind) dimension. Man, however, is not free from certain constraints and conditions, but he is free to adopt an attitude toward them. Even in the case of psychosis, if we see it as a biochemical or mental disorder, nevertheless, the content with which the patient fills it, is his personal creation, a mortal processing in which he narrows his suffering.

Man's responsibility is even expressed in his attitude toward the temporariness of his existence. Man must constantly decide what the "memory state" of his existence will be. Man has many opportunities, which are temporary, but he can exploit them by grasping a single one and responding to it. This is the meaning of the moment, and this is also his freedom - the freedom to choose - not an absolute freedom which may lead to anarchy, but freedom combined with a sense of responsibility. In this regard, Frankl quotes Hillel, "If I don't do it, who will do it? If I don't do it now, when shall I do it? And if I do it for myself, what am I?" Frankl found the essence of logotherapy in these three questions. The first question implies "I am irreplaceable", the second question implies that "Every moment is unique and cannot be repeated", and from the last question we learn that if I act only for my personal benefit, I am disloyal to my human nature (Fabry, 1983; p. 57).

Man as a responsible creature must exploit the meaning potential of his life, and the true meaning of life is found

in the world, and not necessarily within man and within his soul. Exploiting the meaning potential of life does not necessarily mean self-actualization, as Maslow (1968) holds, but human existence is fundamentally man transcending himself. That is to say, self actualization will not be achieved if it is an end unto itself; it will be achieved only as the by-product of rising above oneself, exceeding oneself (self transcendence). This will be expressed in the ability to be useful. Man will only become truly human or a true self being if he experiences self transcendence in his personal being. Man's self actualization is in fact an unplanned by-product of self transcendence. In this approach, Frankl expands the philosophy of Heidegger (1927), who claimed that to be human means to be in the world, i.e. to belong to something or someone other than oneself. The main obstacle in man's life is his narcissistic preoccupation with himself and the inability to rise above himself, and what gives man the greatest satisfaction in life is simply the fact that he can devote himself to something beyond himself.

According to Frankl, man's desire for "meaning" is a primal force, and not merely a secondary rationalization of instinctive drives. Thus "the significance of life" is not something archaic, but the unique significance of a person at a given moment. It changes constantly, and can be revealed in three ways:

- (a) Doing something;
- (b) Practically experiencing a value, e.g. love ;
- (c) Suffering.

Frankl distinguishes between the "meaning of life" which is specific, unique and personal, and the values which, as he defines, have "universal meaning". He argues that values attract man to one or another behaviour, and they are transferred by means of traditions. Accordingly, the breakdown of traditions will affect only the values, but the values do not drive man further. Man cannot have something like a "moral drive". Man decides to behave according to morals, and he will do so for something to which he is bound, or for a loved one, or for his God.

Logotherapy is a practical theory against self hate, strengthening people and teaching them that in life there is no situation from which there is no way out. If there is a chance of changing a troublesome situation, the more the better! If not, then one can always change oneself and one's attitude. With the assistance of logotherapy, anyone can activate the rebellious force of his spirit and counteract the motives and causes active within himself. To do this he needs only a sense of humor, in order to be able to laugh at himself, and to forget himself, both of which will help him to see himself in a new light. **"The belief in meaning, the desire to find it and the freedom to search for it - these are the basics of logotherapy"** (Fabry, 1983; p. 12). Frankl does not believe that man should reach a state of emotional homeostasis. In his opinion, the opposite is the truth. Everyone needs a certain amount of tension, which is the result of his searches for meaning and values; tension between his existence and what he is worthy of being; between what he has already done and what he must

yet do. This is "nooedynamics", and if it abates, man creates tensions artificially; for example, by his exposure to sports. It may therefore be said that in the meaning of life, according to Frankl, there is a central factor of striving for the future. It is however true that according to logotherapy the reality of the present should not be negated, since one would then feel that "nothing has meaning". Belittling life also causes negation of its meaning. Indeed, striving for the future is part of the meaning of the present.

According to Frankl, individual material objects are merely a means, not a meaning. For example, food is essential for survival, as are a reasonable standard of living, sexual relations, etc. However, mere survival does not relieve man from a feeling of emptiness and lack of meaning. All of these factors are nothing but an illusion of meaning. Only the will to meaning incorporates a true "survival value" and "coping mechanism", these two being innate in the human soul. People under identical conditions whose lives have meaning, will be able to survive and cope with their problems more easily than others who have lost this meaning. Thus true survival depends on the "for whom" or the "for what", or, as Albert Einstein put it in one of his papers "The man who sees his life as devoid of meaning is not only unfortunate, he is hardly qualified for life".

A man whose life lacks the "meaning" for which it is worth living is in a situation of "existential vacuum". The "existential vacuum" is a personality state of a feeling of

emptiness, which is mainly the product of boredom. According to Frankl, the "existential vacuum" is the "neurosis of the masses" of our age, the product of a prosperous society, which because of its technological development has deprived man of his need for the art of survival, and which later undermined the traditions upon which his behaviour was based. "Sunday-itis" has become an ongoing feeling.

The emotional reaction to the state of "existential vacuum" is "existential frustration", where the term "existential" is interpreted in three ways: (1) existence itself, (2) the meaning and characteristics of existence, and (3) the will to meaning, i.e. finding a reason for the human existence. The frustrated will to meaning finds expression in the desire for power, money and pleasure. However, these desires, which are not the true meaning of life, this hedonism, which is nothing but an illusion of meaning, cannot in any way fill the "existential vacuum". The evidence of this is that even when all these are achieved, we are still witness to phenomena such as suicide, addiction to hard drugs or diseases caused by "existential frustration". While it is an emotional response, "existential frustration" is in itself a spiritual distress, not an emotional disease. It causes "nooetic neurosis", i.e. a neurosis which does not originate from the psychological dimension of man's existence, but from the "nooellogic" dimension. It does not stem from conflicts between impulses, drives and emotions, but from spiritual problems, from the tension prevailing in man between "what

he is" and "what he is worthy of being", and the tension between existence and "meaning".

LOGOTHERAPY AND ADDICTION TO HARD DRUGS

Logotherapy is one of the forms of existential analysis. It presents addiction to hard drugs as a product of the authentic, objective distress of the person, which result from his erroneous world view.

Logotherapy does not negate any of the explanations proposed by other theories for addiction to hard drugs, nor does it purport to provide a comprehensive explanation of the phenomenon. Logotherapy merely adds the human-spiritual dimension of man, as an additional tool for understanding the problem and finding a treatment for it. This approach of Frankl emphasises the principle in the conclusion that the only difference between man and an animal is that man is a spiritual-cognitive system. Frankl argues that it may well be true that man has impulses, drives and emotions, and they cannot be ignored. However, the force which guides man, and which enables him to ultimately overcome crises, is his spirituality, and not necessarily the conative, psychological or physiological system. In his view, addiction to hard drugs is not rooted in the somatic dimension or the mental dimension of man, but in the spiritual dimension of man. Only people who are unable to cope spiritually with what their future bodes for them, and only those who are unable to delay gratification, who live life for the moment, for whom pleasure becomes an

end unto itself, only they need drugs in order to obtain, artificially, a form of illusory happiness. They become addicted to hard drugs because of the belief and hope that the illusion of true meaning will actually remove them from the frustrating situation of "existential vacuum", of life without meaning which is reflected in apathy, depression and aggression.

Fraser (1970) reinforces Frankl's opinions and says that hard drug addicts are the typical product of a frustrated youth, whose problems lie in neglect of the human spirit. According to him as well, "existential vacuum", which is the product of a conflict between values, spiritual suffering, humiliation, fear and lack of self actualization, motivates the addict to seek escape in drugs. He is not an addict when he first tries the drug. In many cases, the first time the drug is used is nothing but an attempt to suppress spiritual frustration - a temporary reprieve from the tribulations of life. Even when it seems that social pressure is the motivating force, the very fact that this pressure is capable of tempting him to try drugs is in itself a sign of spiritual disease. When someone first turns to narcotics in order to relieve his frustrations and feelings of incompatibility, what he is actually saying to society, his family and to himself is "I am now cutting myself off from nature, from my previous self, and from everyone who does not belong to the drug culture. I am undergoing not only a cultural crisis, but "spiritual chaos". He feels deeply guilty for having compromised the truth, for having failed in his struggle against injustice,

for having stolen from and exploited his friends, for having exploited his family and above all for not being aware of his own potential. According to the writer's findings, the addict generally does have high potential, but his performance is low. His very existence as an addict depends on his ability to obtain money in order to support his habits. The addict is an expert in manipulating others. He can read body language and voice intonations, and he can decide on the basis thereof whether others will come across and take pity on him, thus giving him money for drugs, or whether they will reject him. With the aid of his manipulation, he usually succeeds in creating ties with someone else who, as it were, understands him and is prepared to forgive him for his failures. However, over time his spirit, will and thoughts become confused in the throes of addiction, and he becomes easy prey for those who exploit his troubled condition. There is something paradoxical in the behaviour of the hard drug addict in that although one characteristic of his behaviour is disorganization, lack of discipline and the inability to take charge, then because of his deviant behaviour he waives his rights to decide about himself and surrenders his life to the hated authority. Most drug addicts are filled with a generalized fear for no apparent reason. They are afraid of close interpersonal relationships and see themselves as being outside general civilization, and they rarely speak of their feelings. This fear undermines their ability to trust others, particularly authoritative images. Nevertheless, their behaviour brings them into constant contact with the police, detention centers and prisons.

According to Fraser (1970), one of the most prominent personality characteristics of drug addicts is their low self image. Drug addicts talk a lot about their self sufficiency, but their self destructive behaviour exposes the falsehood behind their words. Drug addicts act on the extremes of the range from absolute perfection to imperfection. When they are unable to achieve their expectations and reach perfection, they do not interpret it as a learning experience, and they consequently see no alternative but to use drugs, and they thus feel that they are drawn by their environment to the depths of despair.

On the one hand, self confidence is impossible for the addict, because his doubts about himself deny the meaning of his being. On the other hand, he cannot immerse himself in constructive, meaningful activity, because he lacks that self appreciation and confidence. He is filled with helplessness, pain and despair. He suffers from a disease of the spirit, failure of courage and loss of hope. In order to extricate himself from his troubled condition, the hard drug addict must be helped to find the content with which to fill his emptiness - meaning for fulfilment. The addict may well initially resist the idea that if he is to be a free human being he must choose from values which bind human beings together, yet retain the individuality of each person. His past experiences do not permit him to trust such values. He prefers to invent his value system or to accept the values of the sub-culture of addicts, since that is where his loyalties lie, so long as this group gives him momentary relief from his despair. The addict sees freedom

as a fantasy. He cannot see that freedom exists only within limits, and he cannot assume the responsibility of life within that framework. He tends to think of life as if it were passing over a monorail, as static, as unchanging and undisturbed. He rejects the fact that the freedom of vitality can be found in dynamic experiences in life, in which human values are constantly changing. The addict wraps himself in a complex of assumptions which limit the need for serious thinking, activity and human feelings. He assumes that tomorrow will be an exact copy of today, that he can obtain the means to get another dose of the drug, and he will continue his static way of life. As mentioned above, his intelligence and craftiness often enable him to achieve these objectives.

Fraser (1970) says that if we believe the cliché that "once an addict, always an addict", we destroy one of the fundamentals of logotherapy, i.e. that man is free to decide upon his acts and experiences, to transcend himself, contemplate himself, and even confront himself over his attitudes and behaviour. Logotherapy argues that these human characteristics allow man to resist the social and psychological forces he is subject to, to take a stand and change his attitudes. Even the drug addict can, because he is human, change his way of life and free himself from his addiction. Logotherapy helps remove the addict's label as a hopeless case, thus indirectly preventing what might become a self-fulfilling prophesy. With the help of a competent logotherapist, who will be assisted by the nooetic aspect of the addict, which in terms of

logotherapy cannot become sick, even hard-core addicts can be rehabilitated; they too have an opportunity to find the meaning they will wish to achieve. Because of his nooetic drives to know, the hard drug addict can be instructed to accept the idea that his use of drugs is nothing but a hopeless attempt to satisfy one of the basic drives of every human being - to know. And when the addict is able to accept this idea, he will open himself to accept other ideas about himself, that he should feel free to use all of his human faculties, and that nobody can be free if his senses must be perpetually dulled because of the effect of drugs.

On the basis of clinical experience as a logotherapist in Germany, Lukas (1977) found that people become drug addicts for two principal reasons: suffering and boredom. They want to forget a fate which has befallen them, from which there is no escape, or fill an internal vacuum which has become intolerable. According to her, there are, of course, also secondary causes of drug taking such as, for example, curiosity, resistance to authority, social pressure or simple ignorance, but all these are expressed only when the principal reason is present.

The uniqueness of logotherapy in contrast to other theories is that it distinguishes between "reasons" for addiction and "causes". A "reason" is something substantial, deep and internal such as, for example, the "meaning of life". A "cause" is an external function. For example, someone may cry for no reason, but simply because

someone near him is peeling an onion. There is no causal system within him which would have caused the tears of its own accord. However, when someone cries because of a tragedy which has befallen him, the tragedy has caused a specific series within him, which is the cause of the tears. Even when he stops crying - when the "cause" disappears - the "reason" will remain. It may be concluded from this approach that a specific background, environmental conditions etc., may be "causes" of addiction. For some people, these causes serve as means of reducing or enlarging the barrier to addiction. On the other hand, the "reason" for addiction to hard drugs is, apparently, a state of "existential vacuum" which longs to be filled, and when it fails it finds refuge in drugs.

To summarize, it may be said that by its attitude to drug addiction, logotherapy teaches us to humanize psychoanalysis, individual psychology and behaviourism, which force the phenomena into a pre-determined mould of interpretation. Frankl holds that "It is clear that man should no longer be viewed as a creature, whose main interest in life is to satisfy drives and instincts or mediate between the "id", "ego" and "super-ego". It is also unlikely that human substance is merely a product of the conditioning processes of conditioned reflexes, but rather man is revealed here as a creature who searches for significance and meaning, the lack of which probably explains many of the scourges of our time" (1982, p. 14). The reasons and meanings are the logos for which the soul longs, while the drives and instincts are the causes. In

order for psychology to be worthy of its name, we must recognize both the logos and the psyche. Values are not just formation reactions and defense mechanisms. To be human means to face a variety of situations, each having a challenge the meaning of which we want to realize. The state of the internal ego of the drug addict, as well as his ability to find meaning in life, are not only a product of psycho-physical or social reasons, but also a product of a personal resolution deriving from nooegenic-cognitive process, which must be sought in the spiritual dimension, not in the cognitive, emotional or conative dimensions.

"The human spirit is the essence of the human person. At the psyche, we are driven, in the spirit we are the drivers" (Fabry, 1985). A person actualizes himself as a person only when he reaches his spirit, just as an airplane which is parked on the ground comes into its own only once it takes off. Frankl, as mentioned earlier, holds that in therapy one should relate to the ability of each and every person to choose, to his individual sense of humor, to his ability to distance himself from his own person and to regard himself from afar, and to his ability to transcend himself for someone or something which is meaningful to him. He recommends four therapeutic techniques:

1. Socratic Dialog - The therapist is advised by the patient of the nature of the problem and attempts to help him to discover what he should be. For example "You wanted to be a dancer, but did not succeed. You will no doubt be able to support and encourage young dancers."

In practical terms, this process is a joint search by way of a Socratic dialog for the goals, aspirations and desires of the patient, and the final objective of the Socratic dialog is to change the person from what he is into what he should be. All this takes place in small steps. At each step, the patient is given a challenge which he is capable of meeting, and the degree of challenge is heightened each time.

2. Paradoxical Intention - This therapeutic method is used when it is desired to break a certain pattern of behaviour and bring the patient to a state in which he is in full control of himself, instead of being a victim of circumstances. In this therapeutic technique as well, the therapist uses the patient's sense of humor, attempting to bring him to a state in which he can look himself as a human being from the outside.

3. De-Reflection - This technique is intended mainly for treating problems of hyper-thinking and hyper-activity, etc. The therapist assists the patient to reflect himself away. As with the preceding method, self transcendence may also be used, i.e. to help the patient not to think of himself but of things beyond himself; in other words, to think about satisfying the other instead of being preoccupied with his personal gratification.

4. Modulation of Attitude - When a certain situation cannot be changed, e.g. the loss of a loved one, an attempt is made to find new meaning in the experience. In other words, the

therapist helps the patient to change his attitude from despair to hope.

As we see, the four therapeutic techniques described above, individually and jointly, may be suitable for treating patients who are addicted to hard drugs.

DEFINITION OF THE FRANKLIAN TERM "MEANING OF LIFE" IN THE CONTEXT OF THE PRESENT STUDY

In philosophical literature, the term "meaning of life" is defined as an internal obligation, which a person develops toward life in the context he believes in. This context has been given various interpretations. For instance, religious models argued that the meaning of life derives from God. Some existentialists hold that the substance of life derives from man's very existence. Outstanding among them is, for example, Bugental (1965), who applied this to the theory of existentialist anxieties. In his philosophical lectures, Frankl unites both models, the religious and the existentialist, and speaks of the "higher meaning" - a universal order, in which there is place for everyone. But anyone can find this order, according to his general view in religious or secular terms. According to him, the search for the "higher meaning" is an interminable attempt to understand the logic of life, in spite of the chaos and disorder which seem to prevail in it.

The empirical approach to the term "meaning of life" developed in the wake of the literature of social scientists of a phenomenological orientation, who developed literature which in addition to dealing with the philosophical question of "what is the meaning of life", deals with questions relating to the nature of the experience and conditions under which the individual experiences his life as meaningful. Rudyhar (1936), for example, sees the individual's understanding of the meaning of life as representing a framework, method or attitude within which he perceives himself as living his life (such as in naturalism, humanism or certain religions). Camus (1946) argues that the feeling of lack of meaning is reflected in feelings of estrangement and emptiness; the reverse of which is the assumption that man understands the meaning of his life, when expressed in a feeling of duty and obligation, consideration of values, faith and love. Maslow (1964) speaks of the feeling of self-actualization. Weisskopf - Joelson (1968) described human life as meaningful if it is based on a feeling of wholeness and belonging. Almond and Battista (1973) refer to the meaning of life as a "positive life regard", which means the individual's belief that he is implementing a life framework or goal in life, which gives him a worthwhile understanding of his life. McLeish (1972) holds that the meaning of life is expressed in an obligation, value attitude or faith. In fact, all of the above represent a relative approach which determines that an obligation to any system can serve as a framework for the development of "meaning". In other words, it is not the nature of the individual's belief system which is

determinant, but the extent of his devotion and obligations toward it. Thus the relative model promotes tolerance of all faith systems, and therefore in practical terms it embraces all of the philosophical models which deal with the "meaning of life". However, it also expands the opportunities for research with the questions: How do individuals develop "ego" systems and how do these interact with social systems.

As distinct from Frankl's philosophical approach to "higher meaning", Frankl also discusses the "meaning of life" with a phenomenological orientation, and with a relative approach. Frankl also holds that man experiences the meaning of his life and understands it within his personal terms of reference. According to Frankl, the meaning of life is, in principle, the individual's goal in life for which he sees himself struggling, or the meaning of the moment, which can be discovered in any situation for itself; the "meaning of life" is constantly changing and man can discover it at any moment.

Notwithstanding Frankl's discussion of the "meaning of life" with a phenomenological orientation and with a relative attitude, we still have mainly a philosophy of life which is difficult to express in empirical terms which would enable it to be tested scientifically. In order to bridge this gap, and in order to facilitate quantitative treatment of the question of the "meaning of life", which is the major corollary of Frankl's theory, we were forced to perform an operationalization of this corollary, which for the purpose

of the present study was translated into observative terms. Man's time perspective was specified as the indicator of the "meaning of life" in Franklian terms: our assumption was that someone whose life is meaningful in Franklian terms is someone with a future time perspective. By simply looking at the future, he is also, of course, able to cope with problems in the present. On the other hand, someone whose life lacks meaning and who lives in a state of "existential vacuum" according to Frankl, does not strive to change things, even in the future, and he is in a kind of fixation for satisfying his immediate needs, in perpetual pursuit of means rather than meanings, one day follows the other and each passing day seems the same... In observative terms, this person has a present time perspective.

Regarding the "meaning of life" in terms of future time perspective, Frankl coined the term "nooedynamics", which means simply the tension that one experiences about one's **future**, which in his opinion is essential for proper functioning. This term is also supported in the existentialist approaches of Maddi (1967), May (1958, 1961) and Scher (1969, 1971), who hold that "when a person makes past-oriented decisions, he inevitably chooses to remain the way he has been, unchanged. This choice creates so-called "ontological guilt", based upon a sense of missed opportunities (and not in the classical Freudian sense of the term). On the other hand, future-oriented decisions create so-called "ontological anxiety", due to the fact that one chooses a situation of uncertainty and cannot know the results of his decision. By definition, future-oriented

decisions are meant to generate change within a person" (Ben Yehuda, 1981, pp. 87-88).

Since according to Frankl man's spirituality can never be harmed, he can always strive for a worthy goal for himself. He need only be familiar with the choices presented by reality and his ability to change things. "There is no situation in life which is devoid of possibilities, choices and alternatives. If an individual can change a troublesome situation, he must do so. If an individual is found in a state which is beyond his ability to change, he has to acknowledge the alternative that he always has: to change himself and his attitude" (Eisenberg, 1983). This approach leads the individual to constructive solutions. He becomes active instead of passive (as defined by Piaget, 1961), and gains an internal locus of control (as defined by Rotter, 1966) instead of an external locus of control, with the ability and motivation to find the possibility inherent within reality and to change the situation: "responsibility = response-ability" (according to Fabry, 1968). Thus one of the sub-components of man's future time perspective is assuming responsibility and motivation to change things.

Another sub-component of man's future time perspective is the insight he shows regarding his uniqueness and the truth about himself. Rogers (1961) argues that it is not possible to predict behaviour on the basis of family climate, educational or social experiences, environmental or cultural influences, medical history, or heredity, etc. The best predictive factor is the degree of self understanding. Kurt

Lewin (1961) defines the time perspective as "an assembly of of the individual's opinions about his psychological future and his psychological past as exists at a given time". Kastenbaum (1961), who examined the subject of time orientation regarding drug addicts, found that with some groups of heroin addicts there was a conspicuous absence of future time perspective. According to him, time perspective is a psychological structure which mediates between the situation of 'here and now' and the opportunity which consists of one's own past, and one's own future. Someone who is unable to find meaning in his present existence within the comprehensive framework of the 'self in the past' and the 'self in the future' has, in his opinion, a limited sense of identity. His analysis links the time perspective not only to self identity, but also to the ability to delay gratification or reactions to immediate stimulation. He emphasises that the time perspective is an alternative for an impulsive action. In practical terms, this opinion expresses an important principle of psychoanalytic and neops psychoanalytic theories, which see the ability to plan and foresee future events as one of the most significant aspects of the development of the ego (Landau, 1973). Leshan (1952) assumed that there is a positive link between a limited time orientation and psychopathy and criminality. According to him, the less achievement oriented one is, the stronger the orientation to the present, which is expressed inter alia in defective or short-sighted planning for the future, and preference for immediate gratification instead of long term gratification.

Only two empirical studies of the subject of FTP (Future Time Perspective) have to date been carried out among drug addicts. The first was made by Einstein (1965), but he defined the time perspective only in parameters of length of time, defining FTP as "the length of the personal future time span conceptualized", and he did not deal with the meaning of the content of FTP. Nevertheless, in the context of the present study, it is worthwhile mentioning his findings that the heroin addicts showed a significantly less extended FTP, when compared with a control group. These findings significantly reinforce our assumption that the time perspective has a significant effect on behaviour in general and on the behaviour of persons who rely on the influence of chemical substances to cope with their problems in particular. The other study was made by Ben-Yehuda (1981), who identified two personality types among drug addicts: people with a present time perspective and everything involved in it, as against people with future time perspective. In his opinion, the time orientation of drug addicts remains fixed and cannot be changed by treatment involving the administration of methadone, which in principle contradicts our assumption that with the aid of expert logotherapeutic treatment even the attitudes of hard-core drug addicts can be changed, albeit more slowly.

Simply by having a future time perspective, a person shows a rational attitude to life, as against a negative attitude to death. Laskowitz (1965), who examined drug addicts' attitudes to life, found that most were typified by the motto "Live today for there may be no tomorrow"...

One's future time perspective is not merely a function of his self as a separate identity from his environment. It also includes the feeling of ability to be helpful (self transcendence). "Someone who acts only for his personal benefit is a traitor to his human nature" (Fabry, 1968). "The true meaning of life is to be found in the world, and not necessarily within oneself and one's soul. Realizing the potential meaning of life does not necessarily mean self actualization. In other words, self actualization will not be achieved if it is an end unto itself, but only as a by-product of self transcendence, exceeding oneself, going beyond oneself. The questions of "Who am I?" and "What are my goals?" undergo a transformation into the questions of "Who must I be?", "What are my abilities?" and "How can I improve my life and not merely adjust myself to it?".

To summarize, **someone who has a "meaningful life" in the Franklian sense is someone who has a future time perspective, which is based on the assumption of responsibility and the motivation to change things, insight regarding one's uniqueness and the truth about himself, a rational and positive attitude to life as against a negative attitude to death and a feeling of ability to be useful.**

This operative definition of the Franklian concept "meaning of life" enabled us to perform a quantitative treatment, of the subject, i.e. to carry out a scientific - empirical study of "meaning of life" according to Frankl.

OBJECTIVES AND HYPOTHESES OF THE PRESENT STUDY

The purpose of the present study was to examine the relevance of the concepts of the theory of logotherapy on a population of hard drug addicts. This group was chosen because it is most extreme in terms of the theory, and testing it will therefore facilitate amplification of the distinction which forms the foundation of the theory - "meaningful" life as against life in an "existential vacuum".

It was assumed that there is a correlation between addiction to hard drugs and life in an "existential vacuum": i.e. life with no meaning. In terms of heavy drug addicts, "meaning of life" focuses only on the "meaning of the moment", involved in obtaining drugs and satisfaction of immediate needs for pleasure. According to Frankl, this present meaning is only an illusion of meaning, because a meaningful life must consist of future time perspective, assumption of responsibility, motivation to change things, insight about one's uniqueness and the truth about oneself, a rational and positive approach to life, vis-a-vis a negative approach to death, and the feelings about the ability to be useful. During the withdrawal process, according to the concepts of Frankl's theory, the addict's world view changes in the direction of a search for the true "meaning of life", a future time perspective. We assume that the success of the withdrawal process depends on this change as well.

The present study, which was conducted over a three year period (1984-1987) focuses on a number of time periods: April 1984 (six months before the formal tests of the study were carried out) until and including October 1984 (the formal commencement of the study and the commencement of logotherapeutic treatment within the overall framework of a methadone maintenance programme). This period will hereinafter be called 'Time I'. The follow-up period from November 1984 to April 1987 will hereinafter be called 'Time II'. The period from May 1987 to October 1987, when the study ended, will hereinafter be called 'Time III'. The research is based on the subjects' initial level of addiction, their initial meaning of life as related to their final level of addiction.

Our hypotheses are as follows:

1. There will be a correlation between the level of addiction to hard drugs and the person's meaning in life at time I: A hard-core addict is characterized by less meaning in life, as expressed by increased present meaning and less future meaning.
2. There will be a correlation between the initial level of the meaning of life of the subjects (at Time I) and the final level of addiction (Time III). In other words, the more future meaning an addict has, the more he will benefit from logotherapy and the better his chances of withdrawal from hard drugs; and vice-versa the more pronounced the present meaning and lack of

future meaning, the worse his chances of withdrawal and he will benefit less from logotherapy.

The two hypotheses described above were tested by means of accepted personality tests, and by means of an experimental questionnaire which was constructed especially for the purpose of the present study, applying Anderson's (1981, 1982) information integration paradigm to the attitudinal framework of Frankl's theory of logotherapy in regard to addiction to hard drugs. The construction and validation of the questionnaire, in order to enable it to serve as an instrument for the differential diagnosis between hard drug addicts with very minor chances for withdrawal and rehabilitation, and addicts with withdrawal and rehabilitation potential, may be considered a further objective of the present study.

M E T H O D

S u b j e c t s

We studied twenty-five patients addicted to hard drugs who enrolled at least six months before the commencement of the present study in a private fee-for-service methadone maintenance program at "Medicate" - A Drug Addicts Treatment Center located in Tel Aviv, Israel which is under the supervision of the Ministry of Health. The methadone maintenance program as practised at "Medicate" consists of issuing prescriptions for a substitute for hard drugs - methadone (maximum of 40mg. per day). The prescription is given to the patient by a qualified physician once weekly, and the methadone is purchased by the patient himself at the specific pharmacy determined by the Ministry of Health. Apart from pharmacological treatment, all of the patient's medical problems (not only those related to his addiction) are treated at the clinic. At least once weekly, he must participate in a psychotherapy session (either individual or group) in the spirit of logotherapy, and he is counselled to lead a normative life in his natural environment (family, friends, etc.) and of course to attempt to rehabilitate himself in occupational terms. It should be noted that only patients who are shown to be using hard drugs by five consecutive urine tests are accepted for the programme, and during the course of treatment, unannounced urine analysis laboratory tests are conducted at least once monthly in order to check whether the patient is actually using only the methadone

given to him by prescription from the clinic or whether he is also continuing to use illicit drugs.

The subjects were sampled at random from a population of 250 patients enrolled for the same program on the basis of three criteria: (1) Sex: male; (2) Age: 20-30; and (3) Education: At least eight years of school. In order to ensure that the random sample truly represented the programme's attendant population, the demographic characteristics of those persons included in the sample were compared with those of the 250 other clinic patients in terms of sex, age, education, marital status, length of addiction, employment, criminological background, etc... It was found that of the 250 patients enrolled in this program, 78% were male and 22% female, 67% were in the 25-30 age group. 78% were born in Israel, 80% were of Sephardi origin and 20% of Ashkenazi origin. Although 93% came from a very low socio-economic background, 72% had studied in some form of educational framework and had completed at least eight years of school. Although 94% were of working age, only 20% were actually working, the rest were living on support, with 88% supported by public institutions. 71% of the subjects had families of their own, of which 45% had one child, 28% two children, 18% three children and 9% four children. 84% of the subjects were involved in crime and had served prison terms of one to three years. 20% had already been addicted for 10-12 years, and 21% for 13-16 years. 71% considered methadone as a medication which was vital for their lives. 37% had already attempted to withdraw from drugs once, 14% twice, 23% three times and 26% four or more times. In other

words, 80% of the patients in the present programme had made in the past other failed attempts to withdraw, and it should be noted that within the framework of this programme as well only a small percentage satisfied all the criteria over the long term, for example-only 6% of the patients in the programme attended psychotherapy for 10 consecutive sessions on fixed dates, by appointment.

The 25 subjects of the present study were rather homogenous in social terms: The average age was 26.06. The distribution by countries of origin was: 20 born in Israel and 5 born abroad; 20 of Sephardi origin and 5 of Ashkenazi origin. Family Background: 2 were children of Holocaust survivors, 2 from broken homes, 6 from families with criminal backgrounds; all of them came from a low socio-economic background. Education: Average of 9;11 years of schooling. Criminal Background: 17 had a criminal record and had served at least one prison term. Military Service: Only 5 subjects had completed full military service, and 12 partial service (they were generally discharged after a few months on the grounds of unsuitability or drug use). 8 subjects did no military service at all. Present Family Status: 14 married with children, 3 married with no children, 2 divorced with children, 6 single. Employment: 7 worked part time at occasional jobs, 18 not employed at all. Physical Condition: All subjects underwent a physiological examination by the clinic's physician, and other than physical problems resulting from drug use (e.g. 2 subjects were found to be suffering from hepatitis and 5 suffered

from infected veins used for injection, phlebitis and thrombosis), they were found to be physically healthy. Emotional Condition: 8 subjects had previously been in psychotherapy, 2 for personality disorders, 2 for depression, 1 for epilepsy, 1 for kleptomania, 1 for a nervous breakdown and only 1 had been a patient in a mental hospital for over a year after he was diagnosed as schizophrenic. Comparison of the demographic statistics, obtained from the subjects of the study, to those of the 250 patients who had also participated in the methadone maintenance program conducted by the same clinic, showed full correspondence. In other words, this particular study group was found to be representative of the sum total population of drug addicts undergoing treatment at Medicate.

In terms of the addiction background of the subjects, it was found that the average age of commencement of use of drugs in general was 16.05. It is also worthwhile examining the two extremes of age of commencement of use: two subjects (who belong to the hard-core addicts group as described below) had already begun using light drugs at the age of 12 and only one subject (who belongs to the withdrawing group as described below) began using drugs only at the age of 23. It is interesting to note that this subject (no. 24) is one of the 6 subjects who had not begun drug use with hashish, but immediately began using hard drugs. Of these 6, 3 began with heroin, 2 with Adolan tablets and 1 with opium. With all but one of the subjects who had begun drug use with hashish, it was found that one

to three years had elapsed between the commencement of drug use and addiction. Regarding the exception (no. 17), seven years passed from the time he began using light drugs until he progressed to hard drugs. 6 of the hard-core addict group and 5 of the withdrawing group began drug use under the influence of friends, out of boredom and curiosity. 6 of the hard-core addict group and 3 of the withdrawing group had begun drug use because of family problems. 2 of the hard-core addict group and 1 of the withdrawing addicts had begun use because of failed love affairs, 1 subject (no. 25) began using drugs because of his disappointment over not receiving the military post he had coveted, another subject (no.22) began use because he had wanted to solve a problem with the police over a different matter, and only 1 subject (no.19) claimed that he began using drugs because of emotional tension. All subjects, except one (no. 19) had used heroin in the past. No. 19 used "only" opium, Adolan tablets and Prodormol. With the exception of two subjects (nos. 23 and 24), all subjects had also used "Persian coke" (dirty heroin) in the past. 4 subjects had used "Persian Coke" and Adolan tablets in addition to heroin. 14 had also used opium, 12 had also used Valium tablets, 9 had also used Prodormol tablets and 3 had also injected morphine and dolesdine. 12 of the subjects had attempted to withdraw from drugs at least once and 5 had made two attempts. 1 subject (no. 16) had made three attempts and 1 subject (no. 2) had made four attempts at withdrawal. 7 subjects had never attempted to withdraw from drugs.

At Time I, 15 of the subjects continued to use the hard drugs they had been using previously (nos. 1-15) in addition to the drug substitute - Adolan - which they were given by the clinic on prescription (two subjects - nos. 3 and 7 - did not even use the Adolan). 10 addicts (nos. 16-25) completely stopped using heroin (both according to their own reports and on the basis of the periodic urine tests carried out at the clinic) and switched to using Adolan. Some of these reduced the dose once weekly in a controlled process. Not a single one of the subjects in the group which did not stop using hard drugs saw a possibility of withdrawing in the future. 12 of them claimed that "they have no goal or ambition in life" and do not care even if they die from the drugs, since they are of no use anyhow and "are not worth a thing". 4 claimed that the drugs make them forget their family and financial problems. On the other hand, all subjects who stopped using hard drugs and switched to Adolan saw themselves as having the potential to completely withdraw from drug use. 5 of them (all of whom are married and have children) wished to withdraw from drugs completely, in order to be able to work and function properly with their families and "so that my children don't turn out like me" (no. 24). 2 were becoming religiously observant and believe that it will help them to withdraw. 1 subject (no. 22) has resumed his studies and is interested in publishing a book on the subject of addiction to hard drugs. 2 claimed that "they had become sick of their dependency on criminal society, that because of their addiction they had lost all their belongings, friends from the past and their humanity, that they wanted to build a new

life for themselves without having to feel persecuted or outcast, and to contribute to themselves and to society".

Actually, merely based on the subjects' addiction background, it was possible to clearly divide them into two groups: One group (subjects 1-15) consisted of hard-core drug addicts and the other group (subjects 16-25) of subjects who had been addicted to hard drugs but were now undergoing a withdrawal process by using methadone only. On the basis of the assumptions of this study, each group was expected to behave differentially in response to the experiment and to the other questionnaires presented to them. At Time I, the first group was expected to show lack of "meaning in life", while the second group was expected to have "meaning in life" and thus, of course, a future time perspective and good chances for withdrawal and rehabilitation, which would be expressed in the tests to be made at Time III. Figure I below (page 98) shows the design of the course of the study.

I n s t r u m e n t s

1A. Questionnaire Constructed According To the Paradigm of the Information Integration Theory - IIT (Anderson, 1981, 1982)

The Information Integration Theory offers an experimental factorial design which, by asking the subject to attribute intentions, thoughts and feelings etc. to others, makes it possible to penetrate into the characteristics of his own cognitive and affective system on the subject in question. Anderson (1981, 1982) holds, on the basis of extensive empirical support, that this indirect questioning method produces far more reliable information on mental processes and entities than direct questioning, and makes it possible to extract the maximum amount of information on the cumulative effect of several personality factors on behaviour.

This method is based on three fundamental assumptions regarding man's cognition and behaviour: (1) People are constantly exposed to a complex, multi-dimensional world which is filled with a multitude of stimuli. (2) People handle these stimuli multi-dimensionally, i.e. they do not simplify them into a single dimension, but relate to the multi-dimensionality of the world of stimuli. (3) The product of this multi-dimensional handling, which takes place in the individual's brain, is a single response to the

manner in which information from the various dimensions is integrated or merged in the individual's mind.

Unlike the approach of Piaget (1969), for example, who argued that cognition develops from the uni-dimensional to the multi-dimensional, and that children in the egocentric phase of cognition ignore typical dimensions of the judged stimulus and relate only to a single dimension, which is not necessarily typical, Anderson (1981, 1982) argues that the mental and emotional processing of a given stimulus is multi-dimensional, and according to the theory it is even possible to distinguish which dimension played the more important role, e.g. the length or the width, the agent or the recipient. In other words, the moment someone is faced with two or more dimensions, we can break down the response, which appears to have been given to a single dimension, into how the subject integrated both dimensions. For example, if we place a 7x7 centimeter cake before someone and his response is 49, we can conclude that the process which was performed in his mind was multiplication, while if he had said 14, for example, we would have been able to conclude that the process which was performed in his mind was addition. The processes of addition and subtraction indicate quantitative integration, while the processes of multiplication and division indicate qualitative integration. This assumption brought him into conflict not only with Piaget, but also with almost every theory and every classical body of knowledge in psychology which are based on the assumption that our mental system focuses on a single element of the complex reality and

deals primarily with it, in the process of judgment of that reality. As an example we can take the principle of the central characteristic which is widely accepted in social psychology (Fishbein and Ajzen, 1975).

As described in the introduction to the present study, and on the basis of the operative definition of the term "meaning of life" according to Frankl, we assumed that the time perspective is a crucial factor in the existence of hard drug addicts. Only addicts who have decided to withdraw and are in the stages of withdrawal will be able to perceive the future time perspective, while others, who do not see themselves as having the potential to withdraw from drugs, will be limited to the present time perspective only. In the present study, the experimental framework which is based on the information integration paradigm made it possible, by means of the response on the severity of addiction, to examine and determine whether and to what extent present time perspective and future time perspective play a role in this response. This framework presents to the subjects all the pairs of levels of both perspectives, with each pair presented in a different question, and at the end of each question quantitatively measures the subject's response to the combination presented to him. In other words, this method reconstructs for the subject, in a response-observative format, a causal sequence of events in which the type and level of the meaning, which according to Frankl determine addiction to hard drugs, appear as the cause of the level of addiction to which the subject is asked to relate. The Information Integration Theory is

intended to test a significant corollary of Franklian theory, and is valid for our purposes, because it tests for contradiction of the prediction which is a corollary of the theory. For example, opposite results (i.e. opposite preferences) will lead to rebuttal of the theory.

In the experimental questionnnaire which was constructed for the purpose of the present study according to the Information Integration Theory, the subject will be operationally presented with information on two types of "existential meaning", present meaning and future meaning. As mentioned above, both of these types are expected to be differentially correlated to the hard-core drug addicts and to the drug addicts. The hard-core drug addicts are expected to prefer the "false" meaning, i.e. the present meaning. This meaning is not true because true meaning must be future oriented. On the other hand, the drug addicts are expeted to prefer the future meaning. The questionnaire consists of nine questions based on a full 3x3 dual-factor design, each of the conditions of which contains a description of a drug addict, characterized by a specific level (low, medium or high) of present meaning and future meaning. In each case, the level of meaning in life (content in life) appears at the beginning of the sentence, while the level of search for meaning in the future, according to the Franklian terms, appears at the end of the sentence, where the question to measure response is: "What is the chance that he will become addicted to hard drugs?", and is located between these two sources of information. For example: "It is very obvious that Mr. X has no meaning in

his life. What is the chance that he will become addicted to hard drugs if it is very obvious that he is searching for meaning for his life (low present meaning /high future meaning). Where a subject replies to questions in which present meaning is operationalized by indicating high probability, this means that he does not attribute high importance present meaning as regards non addiction to hard drugs. If he replies with low probability, this means that he is optimistic about the chances of addiction of someone who has present meaning. The same applies to questions in which high future meaning is operationalized: if the subject's responses indicate that a person will become highly addicted if he is searching for meaning for his life, this expresses his belief that these searches have no effect on the addiction to drugs. If he thinks that when someone is searching for meaning in life there is a low probability of addiction, this indicates that he believes that the search for future meaning in life has a positive effect on drug addiction. The 9 items are presented to each subject consecutively at a random order. (See sample questionnaires, Appendices 1 and 2).

As regards the visual validity of the questionnaire, a preliminary test was conducted on the specific population of this study - 10 drug addicts who are undergoing treatment at "Medicate". It was found that all questions were clear and were fully understood by all patients.

- 1B. Cardboard rating scale - 50 cm long and 3 cm wide, with 100 scales. This is the value scale by means of which

the subject indicates the level corresponding to the quality of the response he gives to each question. In order to demonstrate the scale to the subjects, a sad face was drawn on the left-hand side (the lowest level of meaning) and a smiling face on the right-hand side (highest level of meaning).

The administration of the test was as follows: To begin with, the structure of the IIT questionnaire and the accompanying rating scale was explained to the subject. He practised on a few examples, until the tester ascertained that he understood the questions properly and was able to make valid personal choices on the rating scale. The tester then proceeded to present the questions orally. Each question was presented at least twice and in some cases more frequently, while emphasizing both sources of information: present meaning in life and the search for meaning in the future. In cases where the tester was unsure that any part of a question was not fully understood, she repeated it again, until she was certain that the question was fully understood, and only then did the subject proceed to indicate the degree (on the rating scale which was before him on the table) corresponding to his response to that question. This procedure was repeated nine times.

2. The Purpose in Life (PIL) Test (Crumbaugh and Maholick, 1968, 1977)

The PIL test for testing meaning in life is an attitude scale constructed from the orientation of logotherapy. In

practical terms, it is a personality test which aims to detect the level of "meaning in life". For the purposes of the present study, two uses were made of it: Firstly, to examine the "meaning in life" of hard-core drug addicts, vis-a-vis the "meaning in life" of drug addicts using merely methadone. The second use was for the purpose of concurrent validation of the experimental framework according to the Information Integration Theory and that part of Battista and Almond's (1973) Life Regard Index which is relevant to the definition of the "meaning of life" in Franklian terms. The test was translated into Hebrew by conventional means (Levin, Karni and Frenkel, 1975) and its present wording was determined after examination by five judges (see sample questionnaire - Appendix 3).

The PIL test consists of three parts:

The First Part comprises 20 closed questions, with each answer ranked continuously on a scale of seven, from an attitude clearly indicating meaning in life to the opposite attitude, which expresses absence of meaning or purpose in life.

The table of norms and percentile equivalents for this part of PIL test are based on 1,151 cases reported by Crumbaugh (1968). PIL raw scores from 92 through 112 are in the indecisive range; scores above 112 indicate the presence of definite purpose and meaning in life; scores below 92 indicate the lack of clear meaning and purpose.

Both construct and criterion (or concurrent) validity of the PIL have been assessed (Crumbaugh, 1968). The split-half (odd-even) reliability of the PIL was determined by Crumbaugh and Maholick (1964) as .81 (Pearson Product-Moment, $N = 225$, 105 "normal" and 120 patients). Spearman-Brown corrected to .90. The same relationship was determined by Crumbaugh (1968a) as .85 (Pearson Product-Moment, $N = 120$ protestant parishioners nonpatients), Spearman-Brown corrected to .92.

The Second Part consists of 13 questions which are to be completed. The subject must complete each sentence spontaneously and without deliberating. One group of answers consists of the major component of "meaning in life" in Franklian terms - future time perspective - which is further divided into sub-elements: insight, assumption of responsibility, motivation to change things and a feeling of ability to be useful. The second group consists of the elements of "existential vacuum": absence of future time perspective, boredom, disinterest, lack of purpose, no will to live, no insight, inability to assume responsibility, no motivation to change things, and no feeling of the ability to be useful. The score was given on the basis of a content analysis by two judges on a scale of five for each group. In the event of contradiction between the scores of both judges, the answers were referred to a third judge for resolution.

The Third Part requests of the subject to briefly describe his objectives, hopes and aspirations in life, and the

degree to which he is advancing toward achievement of them.

(see sample questionnaire - Appendix 3). The information obtained from this part of the test also helped to distinguish between subjects who have "meaning in life" and those who have none.

3. The Life Regard Index (LRI) Questionnaire (Battista and Almond, 1973)

The authors who developed this questionnaire use the term "positive life regard" instead of the term "purposeful or meaningful life". They define a "positive life regard" as the individual's belief that he is achieving a life framework or life purpose which gives him a valuable understanding of his life. According to them, a "positive life regard" has a developmental nature and depends on commitment to a specific form of understanding of life and creation of an "internal scale" based on this understanding of life, which the individual can use it as an index for measuring his life achievement.

The test consists of two sub-scales: (1) The Framework Scale (FR), which comprises seven positive items and seven negative items, tests the individual's ability to regard his life in a specific context which provides him with a set of tasks, purpose in life or outlook in life. (2) The Fulfillment Scale (FU), which also comprises seven positive items and seven negative items, tests the degree to which the individual sees himself as having achieved his framework of attitudes. The questionnaire consists of a total of 28

items, each with a rating scale of five grades. Adding both scales together forms the Life Regard Scale (LRS), which serves as a general measure of positive life regard (see sample questionnaire - Appendix 4).

From a series of preliminary tests of the LRI conducted by the authors themselves, the following findings resulted: (1) There was a high correlation between the FR and FU scales and the LRS scale (0.94 and 0.93 respectively), and accordingly the LRS can be used as a measure of overall life regard. (2) The reliability resulting from test-retest was $r=0.94$. (3) Use of the LRI to distinguish between high meaning in life and low meaning in life was correlated to the distinction made by means of other diagnostic techniques and the PIL test (see Appendix 2). In the present study, the LRS was concurrently validated with the PIL test and the experimental questionnaire which was constructed according to the Information Integration Theory (IIT).

The Hebrew version of the questionnaire was translated and tested by Greenblatt (1976). The reliability of the Hebrew translation was tested by Pearson correlation by means of test-retest procedures at an interval of two weeks, with the participation of 25 students ($r=0.79$). In order to test whether all items of the questionnaire are attributable to a single factor, the loading of each item on the regarding meaning in life factor was tested, and it was found that the loading of all items ranged from .23 to .67, with the loading of only five items below .40 ($N=491$). According to these figures, the items of the questionnaire

are attributable to one factor of regarding meaning in life.

4. Biographical Questionnaire

The questionnaire was written by the author of this study for the purpose of the present study. It is an unstructured questionnaire, comprising information on the biographical background of the subject, his drug use background and his present condition. The questionnaire was presented in the form of a free conversation and included a clinical interview. This questionnaire, in association with the results of Part III of the PIL test and the criteria for addiction/ withdrawal (see below), gives an overall picture of the subjects, enabling them to be classified according to the requirements of the present study (see sample questionnaire - Appendix 5).

5. Indices for Evaluation of the Success of Attempted Withdrawal and Rehabilitation by Drug Addicts According to the Criteria Specified by Ben-Yehuda (1981)

According to Ben-Yehuda (1981), the success of withdrawal attempts by drug addicts cannot be viewed from the absolute aspect of total cessation of drug use. Although there is no doubt that total withdrawal is the basic goal of withdrawal attempts, in view of past experience - which showed that in spite of physical detoxification addicts were not cured of their addiction, and relapse rates (after detoxification was completed) were as high as 95% within one year of treatment

(Vaillant, 1966; Brecher, 1972) - it may be said that where drug addicts are concerned, even partial success, in compliance with the criteria of general normative behaviour, is a great success among the population of drug addicts.

The five criteria for measurement the degree of success of addicts' withdrawal from drugs, according to Ben-Yehuda (1981), are as follows:

1. Abstinence from non-methadone, illicit "hard drugs" (i.e. heroin, opium, amphetamines, barbiturates, cocaine).
2. Amount of daily consumed methadone in milligrams. The less, the better.
3. Regularity and consistency of attendance at psychotherapeutic sessions.
4. Illegal activity before and after enrollment in the research.
5. Employment patterns, in terms of consistency, continuity, duration, type, legality, income and resort to welfare.

For the purpose of the present study, a sixth criterion was added:

6. General functioning within the family and society.

These six criteria formed the basis for the six indices which appear in Appendix 6. The data were collected between April 1984 (six months prior to commencement of tests for this study) and October 1987, in seven 6-month periods. The period which preceded the commencement of tests, i.e. from April 1984 up to and including October 1984 (when tests began) will hereinafter be called the "initial study period", or "Time I". The follow-up period - from November 1984 to April 1987 - will be called "Time II", and the final study period - from May 1987 to October 1987 - will be called "Time III".

Information on the use/non-use of drugs by the subjects, as well as the type of drugs used (Part 1), was obtained on the basis of the laboratory reports on the subjects' urine analysis. The classification according to the different drugs was made on the basis of the frequency of use of those drugs in Israel. No sub-classification was made of the amphetamines and barbiturates groups, because of the similarity of the effects of the various drugs within these groups.

The amount of daily consumed methadone in milligrams (Part 2) was checked out according to the copies of the prescriptions issued by physicians at the clinic. It should be noted that the amount of methadone was not calculated as an absolute amount, but as a percentage of the maximum daily amount determined by the Ministry of Health for each period. Thus from October 1984 to April 1985, the maximum amount consumed daily was 90 mg. In October 1985, the

maximum amount was lowered to 80 mg, in April 1986 it was lowered to 60 mg, and from October 1986 to October 1987 it was lowered to 40 mg per day.

In Part 3, the regularity and consistency of the psychotherapeutic sessions' attendance was examined on the basis of the attendance sheets used by the therapists, on which they also noted the reasons for non-attendance: (1) Arrest/imprisonment, (2) Illness, (3) Family reasons, (4) Vacation, (5) Absence of Therapist, (6) No reason. Here again, the follow-up was divided into 6-month periods from October 1984 to October 1987, with a total of 24 sessions during each period.

The illegal activity before and during enrollment in the study (Part 4) was taken by self reports of the subjects, as were the employment patterns (Part 5) and the subjects' general functioning within the family and society (Part 6). We wish to note that the studies of Page et al. (1977) and Cox and Longwell (1974) indicated high rates of validity and reliability in narcotic addicts' self reports (0.86 and 0.92 respectively). In Part 4 we examined the number of arrests and imprisonments of the subjects, the types of crimes they committed (drug use, drug trafficking, theft, burglary, violence and others). In Part 5 we examined whether the subject was employed or not, and if so in what type of employment, the daily number of hours they were employed, the number of times they changed workplaces (during the six-month period), the reason for the change of workplace (dismissal, resignation, emotional, accident, physical) and

whether supported and by whom (National Insurance Institute, family). In Part 6 the subjects' involvement in family life was examined (high, low or no involvement), types of friends (drug users, some drug users, no drug users) and their involvement in social life (full, partial or no involvement).

In operative terms, and for the purpose of the statistical calculations, the indices described above were given the following names:

1. **Illicit Drugs** (i.e. number of illicit drugs found in subjects' urine analysis).
2. **Methadone** (i.e. proportional amount of daily methadone use).
3. **Non-Attendance** (i.e. absence from psychotherapeutic sessions).
4. **Arrests** (i.e. illegal activity of all types - drug use, drug trafficking, theft, burglary, violence, other - culminating in arrest or imprisonment; 0 - no arrest, 1 - up to one week, 2 - longer than one week).
5. **Unemployment** (a component of the employment patterns index; 1 - unemployed, 0 - employed).
6. **Job size** (another component of the employment patterns index, indicating full or part time employment).

7. **No Family Functioning** - related to the general functioning within the family and society index, and comprising three levels: 1 - no functioning, 2 - partial functioning, 3 - good functioning.
8. **Drug-Using Friends** - also related to the general functioning with the family and society index, and comprising three levels: 1 - drug-using friends, 2 - some friends are drug-using, 3 - no drug-using friends.
9. **No Social Functioning** - also related to the general functioning with the family and society index, and comprising three levels: 1 - no social functioning, 2 - partial social functioning, 3 - good social functioning.

As mentioned earlier, all indices related to the criteria for withdrawal from hard drugs were collected in the follow-up during the course of three years, but for the purpose of the present study were used principally for determining the initial level of withdrawal (at Time I) and the level of withdrawal three years later (Time III). In order to maintain consistency in the presentation of the results, the scores were assigned to the indices in the format of a high value indicating a bad condition and a low value indicating a good condition. For example, a low score on the job size index, i.e. number of daily hours of employment, means a full-time job.

Procedure

The present study, which was carried out over a three-year period, commenced in practical terms in October 1984 and ended in October 1987, with constant follow-up divided into six-month periods: April 1984 up to and including October 1984, the period which preceded the study and the initial study period (Time I), November 1984 to April 1985, May 1985 to October 1985, November 1985 to April 1986, May 1986 to October 1986, November 1986 to April 1987 (Time II), and May 1987 to October 1987 (Time III) - a total of seven periods.

When the research proper began (October 1984), each subject was brought into a room, without prior notice of the tests he was about to undergo, and without a clue whatsoever about logotherapy. He was asked to sit at a table, at one side of which the tester sat. The tester explained that the subject was taking part in scientific research on hard drug addicts and that his participation would be anonymous. The subject was asked to agree to the tests and to cooperate as necessary. The tests were begun only after the subject agreed to take part in the research.

The first test presented to the subject was the IIT questionnaire. After a brief interval, he replied consecutively to the biographical questionnaire, which included the withdrawal and rehabilitation indices which appear in Parts 4, 5 and 6, the PIL test and the LRI test.

There was no time limit in any part of the tests. The entire session lasted from 90 minutes to two hours.

When the above tests were completed, a follow-up card was assigned to each subject, upon which at this stage the type of drug used and the amount of methadone consumed daily (Parts 1 and 2 of the withdrawal and rehabilitation success index) were marked.

After completion of testing of all subjects at Time I, they were classified, without being aware of it, only on the basis of their addiction background, into two groups: One group (Group A - "hard-core addicts") comprised 15 subjects, hard-core addicts who do not suffice themselves with the methadone treatment administered within the framework of the methadone maintenance program at the clinic and who in addition use other hard drugs, such as heroin, "Persian coke" (dirty heroin) and opium, and who do not see themselves as withdrawing from those drugs. The second group (Group B - "drug-addicts") comprised 10 subjects, who use only the methadone given to them by the clinic within the framework of the program with the irregular addition of amphetamines or barbiturates. These subjects declared that they were also attempting to reduce the amount of methadone consumed and saw themselves as completely withdrawing from all drugs in the future.

When the first stage (Time I) was completed, all subjects continued with their lives as usual, including inter alia participation in the methadone maintenance program at the

"Medicate" clinic, while in the weekly treatment sessions emphasis was thereafter placed on logotherapeutic treatment and guidance. All subjects were under constant follow-up (Time II), which was recorded on personal follow-up sheets which comprised all of the drug withdrawal and rehabilitation indices. These data were later transferred to the follow-up sheets which encompassed all of the subjects (see Appendix 6).

At the end of Time III (the final six months of the study, from May to October 1987), all data were coded, keypunched and statistically analyzed using the SPSS (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975) on an IBM 3081 computer system at Bar-Ilan University in Ramat Gan, Israel.

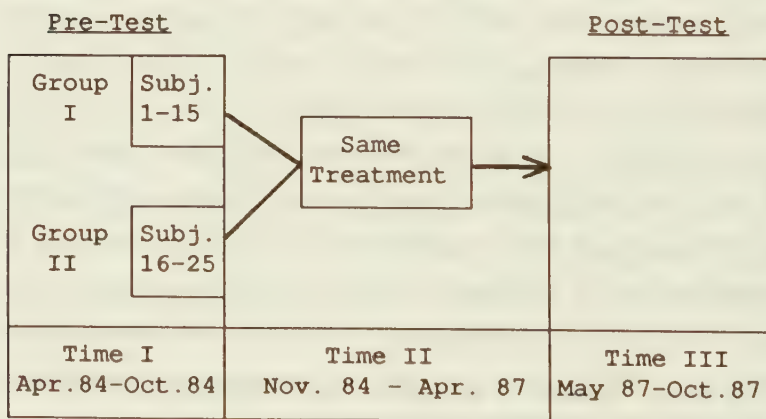


Figure 1 Design of the Course of the Study

R E S U L T S

The present study is a long-term one and consists of three stages: Stage 1 (Time I), Stage 2 (Time II), Stage 3 (Time III). (See Figure 1)

During Time I, data on the level of addiction of the subjects was gathered from the biographical questionnaires, clinical interviews, laboratory reports of the subjects' urine analysis, the prescriptions for Adolan, amphetamines and barbiturates. Data was also gathered at this stage on the subjects' meaning in life, by means of the experimental questionnaire IIT, the PIL test and the LRI test.

During Time II, the follow-up data was gathered on the basis of the hard drug withdrawal and rehabilitation success indices.

During Time III, data was also gathered on the basis of the hard drug withdrawal and rehabilitation success indices (the personal results of each subject on the withdrawal and rehabilitation success indices during the three Times are shown in Appendix 8).

The results of the study will be presented in five sections, as follows:

Section I: Simultaneous analysis - analysis of the differences between "hard-core drug addicts" and "drug addicts", in terms of the various criteria for grading

addiction, and in terms of the purpose and meaning in life at Time I. A structural validation of the experimental IIT questionnaire which was specially constructed for the present study with the PIL and LRI personality questionnaires will also be presented in this section.

Sections II - IV are longitudinal.

Section II: Testing of the correlation between the initial level of addiction (according to the nine criteria) at Time I and the addiction level at Time III.

Section III: Testing of the correlation between "meaning in life" at Time I and the level of addiction at Time III.

Section IV: Discrimination between "hard-core addicts" and "drug addicts" users as defined at Time I (according to use/non use of illicit drugs) in terms of the meaning in life indices and the addiction indices at Time I and Time III.

Section V: The correlation between the logotherapy at Times II and III and the level of addiction and meaning in life at Time III.

Section I:

1. Clinical Findings from the Biographical Questionnaire (including the Clinical Interview)

In principle, the biographical questionnaire was used to gather information on the general background of the subject and his present condition, with due regard, of course, for his drug addiction background. The questionnaire was analyzed and the findings were inter-alia used, in the classification of the subjects into the two groups: one of "hard-core drug addicts" and the other of "drug addicts".

It should be noted that in analyzing the personal interviews of the "hard-core addict" group, it was found that as a rule they are subject to very childish tendencies, egocentricity, inability to delay gratification and heightened preoccupation with their bodies, e.g. pains, "the shakes" etc. For instance, subject 2 said, "I have no purpose or ambition in this damn life. Whatever I try to build, I immediately destroy because of this garbage. I am stuck with it (the drug) and I think of it and only it all the time". Subject 5 said, "Today the drug is everything for me; I am constantly haunted by the fear that I will not be able to obtain it and then I will suffer the terror of the shakes. My whole life is a struggle to obtain money for a prescription. More than anything else, I want the weekly trip to the pharmacy. For me, my entire life amounts to dependency on this disgusting thing; because of it I am now incapable of doing anything and I am worthless". It appears

that as a result of these characteristics, this group was found to be lacking in future time perspective and their entire interest was focused on the present, the pursuit of drugs.

On the other hand, it was found that in the group of "drug addicts" there was awareness of both present meaning and future meaning. For example, subject 16 said, "I have many goals in life, to reach a situation in which I do not need anyone. I have a nice apartment and daughter who is o.k.; I am constantly working and trying to make more progress; I am not the type to wait for people to take pity on me; I help myself". . Another example is subject 25, who said, "After coming to think about religion, it changed me a lot inside. I did some deep thinking and thought that life is more a hallway leading to the lounge room, I learned this as a Jew and I also believe in it. My goal is now to become religiously observant. I do not believe in fate, but only in myself and in God". Subject 24 said, "I have achieved withdrawal from drugs and I now no longer need a dependency. My biggest goal is not to relapse in the future. We have a family business and I want them to give me freedom to act and responsibility, so that I will not always make them suspicious".

Another important element, which became apparent from analysis of the clinical interviews which were held with both groups of addicts, is the problem of the stigma, society attaches to them; the stigma of emotional and physical cripples. On the one hand, they approach the

National Insurance authorities to obtain support, yet they are unable to accept being defined as cripples. Even those who attempted to undergo withdrawal at mental hospitals claimed that admission to the mental hospital, which is the only accepted detoxification facility in Israel, made them feel "like madmen". For example, subject 9 said, "Since they found out that I was at "Abarbanel" (mental hospital in Israel - author's note), everyone thinks I am crazy... everyone runs away from me... and even before that whenever I wanted to do something they told me: You are not physically and mentally well".

2. Distinction between the Groups on the Basis of the Addiction/Withdrawal Indices at Time I

TABLE 1

Means and Standard Deviations according to the
Addiction/Withdrawal Indices of the Hard-Core Addicts Group
(Group I) and the Drug Addicts Group (Group II)
at Time I.

I N D I C E S	Hard-Core Addicts (N=15)		Drug Addicts (N=10)	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Illicit Drugs	4.00	0.76	1.80	0.63
Methadone	1.00	0.00	0.94	0.08
Non-Attendance at Sessions	15.07	3.60	8.50	5.58
Arrests	1.13	0.64	0.90	0.74
Unemployment	0.87	0.35	0.50	0.53
Job Size	2.73	0.70	2.30	0.82
No Family Functioning	2.67	0.72	2.10	0.88
Drug User Friends	2.80	0.41	2.40	0.52
No Social Functioning	3.00	0.00	2.90	0.32

The Manova analysis tests the significance of the differences between groups, taking into account several dependent variables. Having the means and standard deviations (Table I), we used this analysis to find the differences between the groups of subjects (hard-core addicts and drug addicts) in terms of the withdrawal and rehabilitation indices at Time I. The analysis revealed that there are significant differences between them

(Hotelling's $F(9,15) = 8.76; P < 0.001$). Analysis of the means shows that the drug addict group shows lower use of illicit drugs ($P < 0.001$) (on the basis of which the classification into groups was made, i.e., a statistical artifact). The methadone use proportion ($P < 0.05$), non-attendance at sessions ($P < 0.01$), unemployment (less unemployment among the drug addicts) ($P < 0.05$), drug user friends (the drug addicts have less drug user friends) ($P < 0.05$). In addition, a trend was found whereby the drug addict group showed a lower rate of arrests, larger job size and better functioning in the family and society than the hard-core addict group, but these differences did not pass the limit of statistical significance.

In order to sharpen the distinction between the groups, we also carried out a discriminant analysis, the purpose of which is to identify the functions which differentiate between the groups of subjects in terms of several dependent variables, and which is related to the Manova analysis. This showed that the groups differ from one another on the same dependent variables, indicated that the nine indices were able to predict the group classification with 100% success, and accordingly it was possible to classify the subjects into the two groups described earlier.

3. The Experimental Questionnaire (IID)

The raw scores of both groups of subjects to the questionnaire, which was constructed on the paradigm of Information Integration Technique of Anderson (1981, 1982),

is shown in Appendix 6. We will now present a tri-directional variance analysis comprising both sources of information (present meaning versus future meaning) and both groups of subjects at Time I.

Table 2 below shows that there was no difference between the two groups of subjects at the general level of attribution of chances of addiction to hard drugs in the two groups of addicts: the mean of the drug addicts is 50.7 and the mean of the hard-core addicts is 46.2. There is also no interaction between the severity of addiction and each source of information on its own, but there is significant interaction between the severity of addiction and both sources.

TABLE 2

Attribution of Chances of Addiction to Hard Drugs
by Hard-Core Drug Addicts and Drug Addicts

STATISTIC SOURCE OF VARIANCE	P	F	df	SS
Group	0.48	0.54	1	681
Present	0.0001	31.66	2	240.62
Future	0.0001	49.32	2	37328
Group x Present	0.061	3.19	2	2425
Group x Future	0.69	0.37	2	280
Present x Future	0.0015	5.14	4	4605
Group x Present x Future	0.01	3.48	4	3121

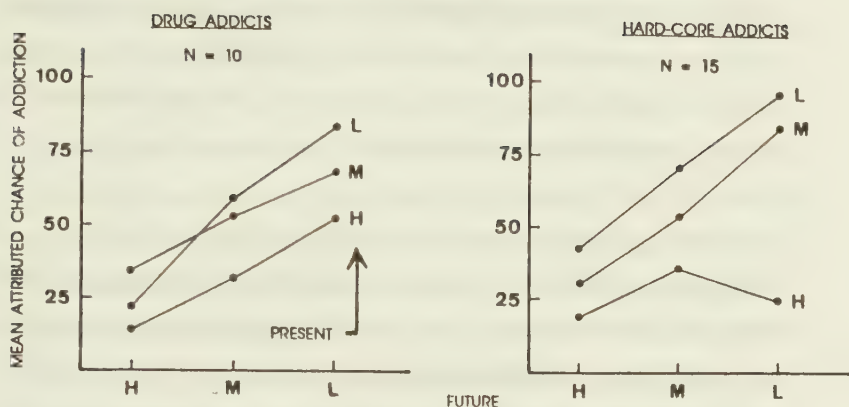


FIGURE 2: Attribution of Addiction by Descriptions of Present Meaning and Descriptions of Future Meaning for Both Groups of Subjects

Figure 2 presents grouped results of hard-core addicts (group I) and drug addicts (group II). The effect of information about present life meaning of the protagonist is evident from the down left to up right slope in both charts. The lower the informed meaning, the higher the attributed chance of addiction. A visual comparison between the slopes in the two charts reveals an approximately similar trend, namely - the size of effect in both groups is nearly similar.

The importance assigned to the information about present life meaning is exemplified by the distance between the lines. It is clear in both groups, that the lines which

represent lower meaning are spaced higher in the two dimensional graphical space.

Close comparative inspection, however, reveals a greater distance between the lines in the right-hand chart, implying that the hard-core addicts assigned higher significance to present, concrete life meaning.

Another issue derived from IIT relates to the rule of integration which was used by the subject. Taking the left chart for example: two rules of integration are implied by the configural graphic form. The parallelism between the lines representing high and medium present meaning implies additivity, while the fan pattern between the lines representing high and low meaning signifies a multiplicative rule. The same analysis applies for the right-hand chart. Additivity exists between low and middle present meaning for the hard-core addicts, and multiplicativity - between the above two degrees of present meaning and the high degree. The psychological nature of this complicated multiple application of integration rules deserves further experimentation, as proposed by functional measurements (see Anderson, 1982).

Inferentially, two-way ANOVA for the hard-core addicts confirmed the impression regarding main effects, $F(2,24) = 50.8$ and 19.2 for the present and future meaning, respectively, $P < 0.001$. The importance assigned to both factors was highly significant, but the present meaning deserved higher (more than twice) weight for the drug

addicts. An inversed relative weight was assigned to both factors; $F(2,28) = 6.2$ and 30.5 for the present and future meaning respectively, namely, a ratio of $5:1$. This impression is supported by the difference in the P values: $P = 0.012$ and 0.001 .

It can be concluded, that the hard-core addicts have a preference for present time meaning while the drug-addicts have a strong preference for the future meaning. As for the integration rule, additivity is implied for the second group from the insignificance of the interaction term. Because of the complex nature of the relation between the slopes in the graph, analyses of the interaction terms would be of no help, and as mentioned above, but a further and detailed experimentation would be required to advance the issue.

4. The Test of Meaning as a Personal Predisposition (PIL)

Part I: As mentioned earlier, this part of the PIL test is a forced choice test comprising 20 questions. Raw scores from 92 through 112 are in the indecisive range; scores above 112 indicate the presence of definite purpose and meaning in life; scores below 92 indicate the lack of clear meaning and purpose. (The present study subjects' raw scores, see appendix 7).

It was found here that the mean of the raw scores of the hard-core addicts group was 80.8 , while the mean of the raw results of the drug addicts group was 97.3 . The standard

deviation of the first group was 26.03 and 23.4 for the second group.

Part II: This part of PIL test consists of 13 sentences including the elements of "meaning in life" as defined in the present study, to be completed by the subject.

A content analysis was carried out by two judges: the author of this study and a physician at the "Medicate" clinic, who ranked the answers without knowing the identity of the subjects. It should be noted that other than minor disagreements over the scores of subjects 9 and 17, there was unanimous agreement between the judges in awarding the other scores, in other words 92% agreement. As for the scores of the two "exceptional" subjects, the opinion of a third judge was obtained (who is also a physician at "Medicate" who examined the questionnaire anonymously).

The content analysis of the answers was carried out by classifying them into two categories representing the two extremes of the major dimension of the PIL test - one category of "existential meaning" and the other of "existential vacuum". In each category, the answers were ranked on a scale of five, from 1 (low) to 5 (high). A single score was given to each subject for all answers in the first category and a second score for all answers in the second category. In this way, ranked answers at both extremes of "existential meaning" were obtained for each subject. The individual scores of this analysis are shown in Table 3.

TABLE 3

Location of each Subject in Each of the Two Extremes of
"Existential Meaning" according to Part II of the PIL Test

GROUP A - HARD-CORE ADDICTS										
Subject Number	Category I "Existential Meaning"					Category II "Existential Vacuum"				
	1	2	3	4	5	1	2	3	4	5
1		X								X
2	X									X
3		X						X		
4	X									X
5	X									X
6		X					X			
7	X									X
8		X							X	
9		X						X		
10	X									X
11		X							X	
12		X					X			
13		X								X
14	X							X		
15		X						X		

GROUP B - DRUG ADDICTS										
Subject Number	Category I "Existential Meaning"					Category II "Existential Vacuum"				
	1	2	3	4	5	1	2	3	4	5
16		X				X				
17				X			X			
18					X	X				
19		X				X				
20			X					X		
21	X									X
22					X	X				
23					X		X			
24				X		X				
25				X		X				

As shown by Table 3, the content analysis of the subjects' answers to the open part (Part II) of the PIL test reveals a significant difference between the two groups (A and B). For the decisive majority of hard-core addicts (with the exception of subjects 6 and 12, for whom no difference was found), the degree of "existential vacuum" which was apparent from their statements was higher than the degree of "existential meaning". In order to clarify the power of the resulting discrimination, we emphasize that for

a third of the subjects in this group (subjects 2, 4, 5, 7 and 10), the discrepancy was maximal (level 5 of "existential vacuum" vis-a-vis level 1 of "existential meaning") and for another third of the subjects, the discrepancy was of two or more levels. On the other hand, for eight of the 10 subjects in the group of drug addicts, the degree of "existential meaning" which was apparent from their statements was significantly higher than the degree of "existential vacuum" (the exceptions were subject 20, for whom there was no discrepancy, and subject 21, for whom the opposite pattern was apparent). For six subjects in this group (17, 18, 22, 23, 24 and 25), there was a discrepancy of two or more degrees in the frequent direction.

All of the above findings strongly reinforce the conclusion that the PIL test is able to produce from the subjects of the present study, diagnoses which correspond to its conceptual structure.

Part III: In the third part of the PIL test, each subject was asked to tell briefly about his goals, hopes and aspirations and the degree to which he thinks he is progressing toward achieving them. The same judges who participated in the content analysis of Part II of the PIL test also evaluated the information which was obtained in this part of the test in regard to the "meaning in life"/ "existential vacuum" of each and every subject, on the basis of the yardsticks specified in the operational definition of "meaning of life" in the present study. In practical terms, the information which was obtained in this part of the PIL

test expanded and reinforced the validity of the information obtained on each and every subject from the preceding two parts of the PIL test. Regarding all subjects, this part of the PIL test closed the circuit of information on the effect of the "existential meaning" or "existential vacuum" on the level of addiction to hard drugs. It was found that there was full compatibility between this open question and the forced choice questionnaire (Part I) on this attribution. For example: the raw score in Part I of the PIL test for subject 13 was 61 (which means no meaning or purpose in life), while the response to Part III of the test was: "I think that I will not be able to withdraw, I need dependency, childish dependency, I am still a child. I have no-one behind me, so I depend on all sorts of things. I have no goals or ambition whatsoever, I just like to dress well and I am a failure even at that". On the other hand, subject 20 of the drug addicts group earned a raw score of 97 in Part I of the PIL test (which means unclear definition of meaning in life). His response to Part III of the PIL test was: "Until now I have not done anything, I did not concentrate and now I want to make progress, to be independent, to prove to myself, my wife and daughter that I can be a working, thinking and breadwinning man". Finally, subject 22 of this group, whose raw score in Part I of the PIL test was 130 (which means clear meaning in life), said in Part III: "I want to go to college. My goal is to raise my son, help my wife, love her, help my brothers, sisters and family, and help society... to teach my son how to succeed in achieving what I have failed to achieve.

I wanted to be a lawyer, but I failed, and I hope that at my age he will succeed".

5. Structural Validation of Part I of the PIL Test and the Experimental Test (IID)

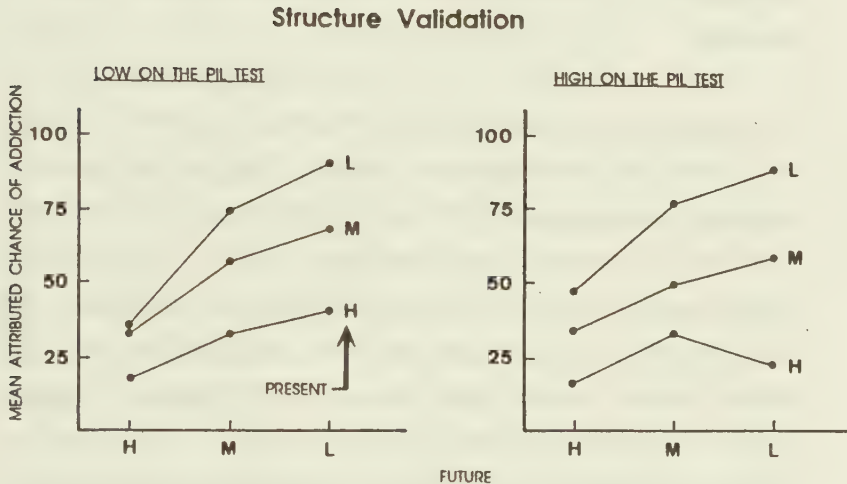


FIGURE 3: Attribution of Chances of Addiction according to the Descriptions of Present and Future Meaning for High and Low PIL Subjects.

In order to test the pattern which emerged from the results of the analysis of the experimental questionnaire - namely, that for most hard-core addicts, the opportunity to obtain drugs immediately is far more important than the future, while for the drug addicts both the present and the future play an important role - similar analyses were made,

but this time on the basis of the predisposition to meaning, as measured by the PIL test (Part I). The validity of the structure, which arose from the comparison of the addiction attributions of the two groups, which were of different levels of severity of addiction, was tested by isolating the two extreme thirds in the PIL test and carrying out a variance analysis according to the two sources of meaning. A description of the means of the two groups is shown in Figure 3.

Comprehensive examination of the components of Figure 3 shows that for both high and low PIL subjects, both types of meaning were referred to in determining the addiction attribution. Indeed, the relative weight of the two elements and the form in which they are combined, are different for the subjects of the two groups: low PIL subjects relate to both types of meaning to the same degree (present meaning: $F(2,14) = 34.02$; $P=0.0001$ - future meaning $F(2,14) = 28.73$; $P = 0.0001$). On the other hand, high PIL subjects relate more to future meaning in determining addiction attribution (present meaning: $F(2,14) = 5.72$; $P = 0.02$ - future meaning $F(2,14) = 25.44$; $P = 0.0001$). In other words, the lower the meaning of the individual presented to the low PIL subjects, the greater the chances of addiction they attribute to him, whereas for high PIL subjects both present and future meaning are combined in determining the addiction attribution. This finding is unequivocal in regard to the questions tested in the present study and confirms the assumption of the discriminative validity of the PIL test. It also reinforces the assumption

that the IIT paradigm is suitable for testing questions of meaning in the Franklian context.

In any event, the manner in which the two types of information are combined should also be taken into account. Figure 3 shows that the lines in both graphs tend to be spread out. This picture indicates that both sources of information were combined by multiplication. Indeed, the interaction, which is the corresponding test of multiplication, is significant only for the high PIL subjects: $F(4,24) = 2.98$; $P = 0.04$, while the statistics for the low PIL subjects are $F(4,24) = 1.89$; $P = 0.14$. It is very easy to attribute the more multiplicative pattern of high PIL subjects to stronger combination of the two sources of information. This fits in well with the theory, but caution is advisable in drawing conclusions until this finding is repeated in other subjects.

6. Structure Validation of the LRI Questionnaire, the Experimental Questionnaire (IIT) and the Part I of the PIL Test

As mentioned earlier, the life regard questionnaire relates to a similar subject of that of the PIL questionnaire. Accordingly, testing of the diagnoses produced by it and comparison thereof to those produced by the PIL questionnaire may serve to validate the conclusions which have already been drawn.

Firstly, it was found that high LRI subjects (according to the results of the experimental questionnaire and its various conditions) attribute greater chances of addiction to an individual who has no meaning ($\bar{X} = 80.5$) than low LRI subjects ($\bar{X} = 6.99$). This difference is significant according to a t test on independent samples: $t = 5.2$; $P = 0.0001$.

A bi-directional variance analysis of the effect of the two sources of information on high and low LRI subjects shows that in both cases the effect of each source of information on the attribution of chances of addiction was significant, but the relative weight of the two sources of information differs from one another for both groups. Thus, for low LRI subjects, information on present meaning and information on future meaning had a similar effect on the addiction attribution (present meaning: $F(2,14) = 28.4$; $P = 0.0001$ - future meaning: $F(2,14) = 51.8$; $P = 0.0001$).

For high LRI subjects, it was found that present meaning is $F(2,12) = 6.7$; $P = 0.01$, and that future meaning is $F(2,12) = 14.9$; $P = 0.0006$. In other words, for the latter, present meaning was considered less important than future meaning. Nevertheless, it should be noted that for low LRI subjects, both sources of information played a more important role in attributing addiction. For the high LRI subjects, the interaction between the two sources of information was significant: $F(4,24) = 3.2$; $P = 0.03$, while for low LRI subjects the interaction between the two sources of information was not significant, although it was almost significant: $F(4,28) = 2.26$; $P = 0.088$.

The following figure shows the attribution of chances of addiction on the basis of descriptions of present meaning and future meaning for high LRI subjects and low LRI subjects.

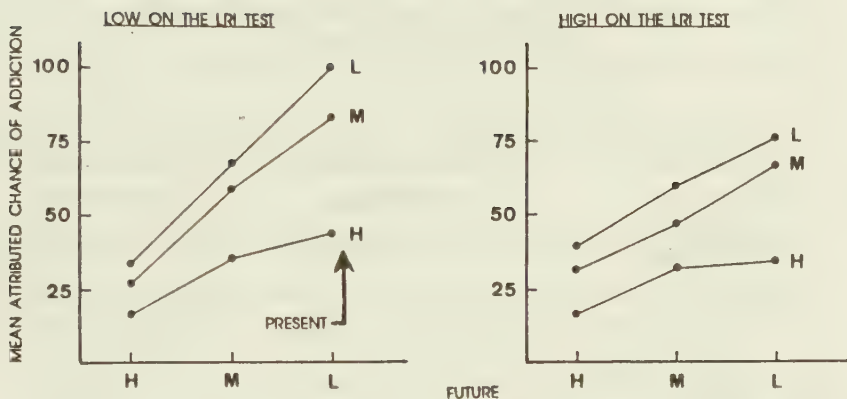


FIGURE 4: Attribution of Chances of Addiction according to the Descriptions of Present and Future Meaning for High and Low LRI Subjects.

Examination of the two graphs in Figure 4 shows a pattern of multiplier combination of the two groups. The significant interaction for high LRI subjects corresponds to that found in high PIL subjects. As a rule, the difference in the relative weighting of the two sources of information and the differences in the interaction correspond to the diagnoses produced on the basis of the PIL test. These findings

facilitate mutual structure validation of each of the three indices involved: attribution of chances of addiction, PIL and LRI.

7. Discrimination between the Groups on the Basis of the Meaning in Life according to PIL and the Two IIT Indices

TABLE 4

Means and Standard Deviations of Meaning in Life Indices (IIT, PIL) of Hard Core Addicts and Drug Addicts at Time I.

Meaning in Life Indices	Hard-Core Addicts (N=15)		Drug Addicts (N=10)	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
PIL	80.8	26.94	97.30	24.60
No importance attached to present meaning in addiction attribution (IIT)	26.8	17.78	28.70	14.06
No importance attached to future meaning in addiction attribution (IIT)	34.1	19.46	21.40	14.57

A Manova analysis, which was carried out for the purpose of finding differences between the groups in regard to the meaning in life indices, showed that there are significant differences between them (Hotelling's $F = (3,21) = 3.83$, $P <$

0.05). Analysis of the means shows that the group of drug addicts had higher meaning in life, both in regard to the index resulting from the PIL questionnaire and from the index deriving from the IIT questionnaire. Naturally, the group of drug addicts attached greater importance to future meaning regarding non-addiction.

The discriminant analysis shows that these three indices are capable of properly discriminating to which group the subjects belong in 80% of the cases ($\chi^2 = 9.40$, $df = 3$, $P < 0.05$). The discriminant function analysis shows that the discrimination is based on the following formula:

Group Centroids = $0.69 \times \text{PIL} + 1.15 \text{ IIT (Present)} - 1.22 \text{ IIT (Future)}$. The coefficients of the discriminant variables are beta coefficients and while for the hard-core addicts group, the centroid mean was -0.58 and for the drug addicts group the centroid mean was 0.87. This leads to the conclusion that hard-core addicts are characterized by a low degree of PIL and future IIT variables, in comparison to the drug addicts.

8. The Correlation between the IIT and PIL Meaning in Life Indices and the Addiction/Withdrawal Indices at Time I - By Calculation of Pearson Correlation Coefficients

Testing of the correlation between the meaning in life indices (present and future meaning in life) as shown by the results of Part I of the PIL test and the IIT test on the one hand, and indices of the level of addiction/withdrawal (according to the indices used to assess the success of

withdrawal and rehabilitation of drug addicts) on the other hand, at Time I, was also carried out by calculating Pearson correlation coefficients. These coefficients are shown in Table 5.

TABLE 5

Addiction/ Withdrawal Indices	Meaning in Life PIL	No importance attached to present meaning in addiction attribution (IIT)	No importance attached to future meaning in addiction attribution (IIT)
Illicit Drugs	-0.19	-0.03	0.40*
Methadone	-0.32	-0.26	0.16
Non-Attendance at Sessions	-0.22	-0.11	0.32
Arrests	-0.05	-0.22	0.09
Unemployment	-0.44*	-0.21	0.10
Job Size	-0.42*	-0.18	0.05
No Family Functioning	-0.38*	-0.13	0.18
Drug User Friends	-0.46*	-0.21	0.09
No Social Functioning	-0.08*	-0.20	0.29

* $P < 0.05$

Table 5 shows that there are a number of correlations between meaning in life according to the PIL test and the IIT test at Time I on the one hand and the addiction/withdrawal indices at Time I on the other hand. In general, there appears to be a negative correlation between them, which indicates that the higher the meaning in life, the lower the level of addiction. However, significant correlations were found only in regard to indirect indices

of the degree of addiction/withdrawal (unemployment, job size, non family functioning and drug user friends).

Another interesting finding is that there is an inverse correlation between the lack of attachment of importance and belief in meaning in life in regard to addiction attribution. However no such correlations were found which pass the threshold of statistical significance. On the other hand, signs were found of positive correlations between addiction/withdrawal indices and belief that future meaning is not important in regard to addiction attribution. In other words, subjects who do not attach importance to future meaning show a higher level of addiction. It should nevertheless be noted that in spite of the dramatic inversion of the correlation coefficients, one coefficient passed the limit of statistical significance: the correlation between this belief and the consumption of illicit drugs.

9. Canonical Analysis to find Correlation between the Addiction/Withdrawal Variables and the Meaning in Life Variables - at Time I

The purpose of a canonical analysis is to find correlation between two groups of variables. It was carried out by constructing two canonical variables, each of which represents a single group of variables, and then calculating the canonical correlation between them. In a canonical analysis, it is possible to examine the manner in which each canonical variable was constructed and to what degree it

represents the group of variables, as well as the power and significance of the canonical correlation between the two canonical variables.

The canonical analysis for the purpose of finding correlation between meaning in life and addiction during the initial period created canonical variables, the canonical correlation of which is 0.94 (Wilks Lambda = 0.06, $P < 0.01$). In other words, it was found that there was a strong linkage between the two canonical variables, i.e. the addiction/withdrawal indices and the meaning in life indices.

Section II - Stability Analysis

In this section, we present the test of the correlation between the level of addiction/withdrawal at Time I and the level of addiction/withdrawal at Time III.

10. Analysis of the Differences between the Groups at Time III in Comparison to Time I - On the Basis of the Addiction/Withdrawal Index

TABLE 6

Means and Standard Deviations of Addiction/Withdrawal Indices at Time III for the Hard-Core Addicts and the Drug Addicts Groups at Time I.

Meaning in Life Indices	Hard-Core Addicts (N=15)		Drug Addicts (N=10)	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Illicit Drugs	2.67	0.62	0.40	0.52
Methadone	1.00	0.00	0.28	0.42
Non-Attendance at Sessions	9.67	4.10	2.10	0.74
Arrests	0.80	0.76	0.20	0.42
Unemployment	0.73	0.46	0.20	0.42
Job Size	2.60	0.74	1.50	0.85
No Family Functioning	2.47	0.83	1.30	0.68
Drug User Friends	2.73	0.46	1.30	0.48
No Social Functioning	2.80	0.41	1.60	0.84

A Manova analysis, which was carried out for the purpose of finding differences between the groups in regard to the addiction/withdrawal indices at Time III, showed that there

are significant differences between them (Hotelling's $F(9,15) = 21.56$, $P < 0.001$). Analysis of the means shows that the group of the drug addicts is significantly different ($P < 0.001$) than the hard-core addicts group in regard to all addiction indices after three years.

The discriminant analysis shows that these nine indices are capable of properly predicting (retrospectively) to which group the subjects belong in 100% of cases.

11. The Correlation between the Various Addiction Indices at Time I and at Time III

TABLE 7

Correlation between the Various Addiction Indices at Time I (below diagonal) and at Time III (above diagonal): Pearson Correlation Coefficients (N=25)

Addiction/Withdrawal Indices	1	2	3	4	5	6	7	8	9
Illicit Drugs	1.00	0.85***	0.64***	0.29	0.52**	0.56**	0.62***	0.81***	0.78***
Methadone	0.49**	1.00	0.62***	0.54**	0.70***	0.74***	0.71***	0.85***	0.79***
Non-Attendance at Sessions	0.44**	0.60**	1.00	0.64***	0.53**	0.51**	0.65***	0.72***	0.68***
Arrests	0.01	0.39*	0.70***	1.00	0.77***	0.73***	0.67***	0.60**	0.58***
Unemployment	0.27	0.65***	0.38*	0.31	1.00	0.95***	0.85***	0.76***	0.74***
Job Size	0.14	0.41*	0.25	0.28	0.94***	1.00	0.83***	0.80***	0.78***
No Family Functioning	0.18	0.52**	0.28	0.27	0.90***	0.85***	1.00	0.87***	0.85***
Drug User Friends	0.20	0.54**	0.32	0.30	0.83***	0.78***	0.93***	1.00	0.91***
No Social Functioning	0.34*	0.75***	0.39*	0.32	0.33	0.15	0.37*	0.27	1.00

* $P < 0.05$

** $P < 0.01$

*** $P < 0.001$

At first glance, it appears that there are positive correlations between all indices of the drug withdrawal and rehabilitation criteria. Some are high and significant, particularly those at Time III. The fact that the correlations at Time III were found to be stronger than at Time I may indicate consolidation and stabilization of the addiction/withdrawal phenomenon over time, so that it applies to all aspects tested.

The fact that there are such strong correlations between these indices is of great importance in terms of their continued use, since they are evidence of the structure validity of these indices.

12. Changes in Withdrawal Success Criteria in the Study Sample between Time I and Time III

In order to ascertain the changes in the withdrawal success criteria in the study sample between Time I and Time III, t test pairs was made for each criterion separately. The correlation between these indices at the two Times was also calculated.

Table 8 shows the means, standard deviations, t test and the correlation.

TABLE 8

Means, Standard Deviations, t Test and Correlation between
Measurement at Time I and Measurement at Time III
regarding Drug Withdrawal Criteria (N=25)

Addiction/Withdrawal Indices	Time I		Time III		t (24)	r
	$\bar{X}$	S.D.	$\bar{X}$	S.D.		
Illicit Drugs	3.12	1.30	1.76	1.27	9.71***	0.85***
Methadone	0.98	0.06	0.71	0.44	3.22**	0.53**
Non-Attendance at Sessions	12.44	5.48	6.64	4.92	6.88***	0.68***
Arrests	1.04	0.68	0.56	0.71	2.92**	0.30
Unemployment	0.72	0.46	0.52	0.51	2.45*	0.65***
Job Size	2.56	0.77	2.16	0.94	2.62*	0.62**
No Family Functioning	2.44	0.82	2.00	0.96	2.86**	0.64**
Drug User Friends	2.64	0.49	2.16	0.85	3.36**	0.54**
No Social Functioning	2.96	0.20	2.32	0.85	3.95**	0.32

* $P < 0.05$ ** $P < 0.01$ *** $P < 0.001$

Table 8 shows that there was an improvement among the study sample in regard to all addiction/withdrawal indices. The degree of significance regarding the differences between Time I and Time III is generally high. There is also a generally strong correlation between Time I and Time III as to the various indices (except for arrests and social functioning, which did not pass the threshold of statistical significance).

The implication of these findings is that there actually was a general improvement in our sample, yet the rather high correlations indicate a consistent pattern between Time I and Time III, meaning that subjects who showed a high level of addiction at Time I tend to show it at Time III as well. Subjects who were relatively in the stages of withdrawal at Time I showed greater improvement at Time III.

Section III

13. Testing of the Correlation between "Meaning in Life" Indices according to the PIL and IIT Tests at Time I and the Level of Addiction according to the Addiction/Withdrawal Indices at Time III by Calculating Pearson Correlation Coefficients

TABLE 9

Pearson Correlation Coefficients
between Meaning in Life Indices at Time I
and Addiction/Withdrawal Indices at Time III (N = 25).

Addiction/ Withdrawal Indices (Time III)	Meaning in Life PIL Time I	No importance attached to present meaning in addiction attribution (IIT) - Time I	No importance attached to future meaning in addiction attribution (IIT) - Time I
Illicit Drugs	-0.17	-0.02	0.44*
Methadone	-0.44*	-0.03	0.32
Non-Attendance at Sessions	-0.32	-0.08	0.40*
Arrests	-0.26	0.01	0.21
Unemployment	-0.32	-0.14	0.26
Job Size	-0.35	-0.22	0.20
No Family Functioning	-0.29	-0.12	0.34*
Drug User Friends	-0.31	-0.03	0.41*
No Social Functioning	-0.38	-0.03	0.37*

* $P < 0.05$

Table 9 shows that there are several significant correlations as to the meaning of life according to PIL and

attachment of importance to present or future meaning in life according to IIT at Time I, and the level of addiction/ withdrawal at Time III.

The correlation between meaning in life according to PIL at Time I and the level of methadone use at Time III passed the threshold of statistical significance, i.e. the more meaning in life the person had at Time I, the less methadone will be used at Time III. There were also found some correlations which indicate that subjects who at Time I believed that the search for meaning in life may affect the level of addiction will use less illicit drugs, miss less therapy sessions, function better in the family, associate less with drug users and function better in society, three years later. In general, it may therefore be said that according to Table 9 correlations were found between the level of meaning in life at Time I and the level of addiction/withdrawal at Time III: a high level of meaning in life according to PIL and IIT at Time I is correlated to a better level of withdrawal at Time III.

Section IV

14. The Correlation between Meaning in Life at Time I and the Level of Addiction at Time III, taking the Initial Level of Addiction into account, on the Basis of a Hierarchical Regression

In order to continue to examine the correlation between meaning in life and the addiction/withdrawal, we applied another analysis technique which takes the initial level of addiction into account. The rationale for carrying out this analysis is that we found high correlation between the initial level of addiction and the final level of addiction, as well as correlation between the initial level of addiction and meaning in life and the attachment of importance to meaning in life in regard to the initial level of addiction.

In the present analysis, we intended to examine to what degree the meaning in life indices make an additional contribution to the withdrawal prognosis and are able to explain the final level of addiction (at the end of the present study) in excess of the initial level of addiction. The model we used for this purpose was a hierarchical regression, on the basis of which we attempted to explain the nine withdrawal index criteria at Time III, by means of nine regression equations. In each equation which explains an addiction/withdrawal index at Time III, we first entered the index as at Time I, as the base line. We then entered the three meaning in life indices, PIL, attribution of

importance to present meaning and attribution of importance to future meaning on the basis of the IIT. These regression equations facilitated: (a) Examination of the increase in the explained variance percentage (R^2 change) of the dependent variable, which results from the addition of the three meaning in life variables in excess of the initial level of addiction. In other words, examination of the addition of the meaning in life indices to predicting the final level of addiction, as if all subjects were of a uniform initial addiction level. (b) Examination of the unique contributions of these variables within the framework of the model. Table 10 shows both stages of the regression analysis.

TABLE 10

Dependent Variable at Time III	STAGE I: Entry of Criterion as at Level at Time I		STAGE II: Addition of Meaning in Life Indices to the Regression Formula	
	R^2	F(1,23)	R^2 Change	F Change (4,20)
Illicit Drugs	0.72	60.81***	0.02	0.57
Methadone	0.28	8.83**	0.17	2.02
Non-Attendance at Sessions	0.46	19.42***	0.06	0.79
Arrests	0.09	2.24	0.12	0.41
Unemployment	0.42	16.74***	0.80	1.06
Job Size	0.38	14.26**	0.14	2.01
No Family Functioning	0.41	15.66***	0.13	1.91
Drug User Friends	0.29	9.67**	0.18	2.34
No Social Functioning	0.10	2.67	0.30	3.39*

* $P < 0.05$

** $P < 0.01$

*** $P < 0.001$

As a rule and as we saw in the previous section, there is high correlation between addiction/withdrawal indices at Time I and addiction/withdrawal indices at Time III. Nevertheless, in regard to several criteria, a significant increase in explained variance percentage was found, resulting from the addition of the meaning of life variables to the regression equation. Here it was found that in regard to predicting most withdrawal indices at Time III, no significant increase resulted from the meaning in life indices in excess of the contribution of their level at Time I. An exception to this rule is the prediction of social functioning at Time III, which was not found to be significantly correlated to its level at Time I. However, the addition of the meaning in life variables increased the explained variance percentage in excess of the threshold of significance.

Section V

As mentioned earlier, throughout the follow-up period (Time II), all subjects in the present study participated in psychotherapy based on logotherapy. In this section , we will examine the relevance of participation in this therapy to the level of withdrawal after three years of therapy, i.e. at Time III.

15. The Correlation between the Number of Therapy Sessions not attended by the Subject at Time II and the Withdrawal Indices at Time III

TABLE 11

(N=25)

Addiction/Withdrawal Indices at Time III	Correlation between Number of Therapy Sessions not attended at Time II
Illicit Drugs	0.81***
Methadone	0.73***
Non-Attendance at Sessions	0.87***
Arrests	0.48**
Unemployment	0.46*
Job Size	0.52**
No Family Functioning	0.58**
Drug User Friends	0.75***
No Social Functioning	0.61**

* P < 0.05

** P < 0.01

*** P < 0.001

The correlation shown in Table 11 shows that there is a link between the number of logotherapy sessions not attended by the subject at Time II and his relative level of

addiction according to the addiction/withdrawal indices after three years of therapy, i.e. at Time III. It is clearly evident that the correlation coefficients are very high and significant, even though the number of subjects is relatively small.

However, since it is possible that the number of sessions not attended is a variable which was to a large degree affected by the initial level of addiction, meaning that it is reasonable to assume that people with a higher level of addiction (Group 1), who - as described in the first part of the study - are in a worse general condition, will be less persistent in undergoing therapy and their condition after therapy will still be worse than those with a lower initial level of addiction (Group 2). We decided to carry out an additional test of the implications of undergoing logotherapy on the level of addiction at Time III, by means of a hierarchical regression analysis.

16. The Correlation between Participation in Therapy at Time II and the Level of Addiction at Time III - on the Basis of a Hierarchical Regression Analysis

In the hierarchical regression, we performed nine regressions. In each regression, we attempted to explain a different addiction/withdrawal index at Time III, whereby in the first stage of the regression we entered into the equation the index as at Time I and in the second stage we added the variable of the number of sessions not attended by the subject, examining the contribution of this addition in excess of that found after the first stage.

This method can be seen as a procedure in which all subjects are placed at the same level in terms of initial addiction, examining how participation in logotherapy is correlated to their final addiction/withdrawal condition. Table 12 shows the details of the regression procedures.

TABLE 12

Dependent Variable at Time III	STAGE I: Entry of Criterion as at Level at Time I		STAGE II: Addition of the Variable of Participation in Therapy at Time II	
	R ²	F(1,23)	R ² Change	F Change (2,22)
Illicit Drugs	0.72	60.81***	0.06	5.91*
Methadone	0.28	8.83**	0.29	14.77***
Non-Attendance at Sessions	0.46	19.42***	0.31	28.56***
Arrests	0.09	2.24	0.17	5.09*
Unemployment	0.42	16.74***	0.06	2.82
Job Size	0.38	14.26**	0.16	7.66*
No Family Functioning	0.41	15.66***	0.20	10.95**
Drug User Friends	0.29	9.67**	0.41	30.71***
No Social Functioning	0.10	2.67	0.29	10.53**

* P < 0.05

** P < 0.01

*** P < 0.001

As we found earlier, there is a high correlation between the criteria as measured at Time I and as measured at Time III. However, the data before us shows that for most criteria measured at Time III, the participation in therapy was also relevant in excess of the initial level of those criteria. A particularly high increase to the explained variance was found in regard to the level of methadone use (which increased by 29%), non-attendance at sessions (31% - however, this finding is defective as a statistical

artifact) drug user friends (41%). Results which are lower - but still significant - were found in regard to the number of illicit drugs found in the subjects' urine, arrests, job size, family functioning and social functioning. Thus it may be concluded that participation in logotherapy is highly relevant to the condition of the subjects after three years of therapy and follow-up, even after their condition prior to commencement of therapy is taken into account.

Summary of the Findings

The hypotheses of the present study with regard to the correlation between the level of addiction to hard drugs and the individual's meaning in life were confirmed. In the initial stage of the study, two forms of operationalization, experimental and personality, which were found to fully correspond to one another, were applied. In the experimental questionnaire (IIT), it was found that hard-core drug addicts (Group I) perceived present meaning as the central dimension in their life, while the drug addicts (Group II) perceived future meaning as the central dimension in their life. In the personality questionnaires, it was also found that hard-core drug addicts (low PIL subjects and low LRI subjects) attached greater importance to present meaning, while those drug addicts (high PIL subjects and high LRI subjects) attached greater importance to future meaning. The experimental questionnaire which was constructed specially for the purpose of the present study, which applies the paradigm of the Information Integration Theory of Anderson (1981, 1982) to the attitudinal framework of Frankl's theory of logotherapy in regard to addiction to hard drugs, was found to be valid for the purposes of the study after undergoing simultaneous validation with the personality questionnaires.

In the final stage of the study, it was found that there is a correlation between the initial level of meaning of life of the subjects and the final level of addiction.

DISCUSSION

The main idea behind the present study was to examine empirically the validity of specific concepts of the theory of Frankl (1958, 1960, 1966, 1967, 1968, 1981, 1982) with regard to the correlation between "existential meaning" or "existential vacuum" and behaviour.

One of the major difficulties encountered in testing these theoretical concepts was that Frankl and his followers (Fraser, 1970; Lucas, 1977; Eisenberg, 1983; Fabry, 1983, 1984) describe the principles of logotherapy in their works and cite several examples of its application, but nowhere in those works is there any concrete definition of the concept of "meaning in life" or "existential meaning". Therefore, in order to conduct an empirical study in relation to this concept, an attempt was first made to define "meaning in life" in Franklian terms by observative definition.

Examination of the theory shows that the main component of "meaning in life" is the individual's future time perspective (Frankl, 1958, 1960, 1966, 1967, 1968, 1981, 1982). Lewin (1951) defined the future time perspective as the sum total of the individual's opinions regarding his psychological past and his psychological future as at a given time. Lewin holds that the time perspective is of extremely great importance in problems such as the degree of ambition, mood, constructiveness and initiative of the individual. According to Lewin, the individual's behaviour is not exclusively dependent on his present situation, but

is affected to a high degree by his hopes and aspirations for the future. Strauss (1962) holds that the concepts of future orientation and delay of gratification are correlated, since the idea of rejection means future gratification of the delayed need. Kastenbaum (1961, 1964) holds that anyone who is unable to find meaning in his present existence within a framework which comprises his "past self" and "future self" has a limited sense of identity. His analysis links future time perspective not only to self identity, but also to the ability to delay gratification or reactions to immediate stimuli. He points out that time perspective is an alternative to impulsive behaviour. Accordingly, on the basis of the above definitions and in view of Frankl's teaching, the definition of "meaning in life" for the purpose of the present study was determined as the individual's future time perspective, which, in addition to a future life view, consists of the following components: The individual's insight about his uniqueness and the truth about himself, his rational attitude to life and positive life regard (as against a negative attitude to death), assumption of responsibility and motivation to change things, and a feeling of ability to be useful. The absence of these components is a situation of "existential vacuum".

The population which was chosen for the purpose of examining Frankl's concepts about the crucial role the meaning in life plays on the individual's behaviour was a population of hard drug addicts who were undergoing treatment at the "Medicate" clinic in Tel Aviv, within the

framework of a methadone maintenance program. Our assumption was that the effect of "existential vacuum" on the individual's way of life will be expressed most clearly in regard to this population, which is extremely radical in terms of the theory. Nevertheless, a serious problem arose: how to isolate the effect of the "existential vacuum" variable from other variables which, according to other theories (biological, sociological, socio-psychological and psychological) have also an effect on addiction to hard drugs. In order to overcome this problem, we selected a population of drug addicts which was homogenous in psycho-physiological and social terms (with the exception of one subject, no. 21, who will be discussed later), and within this population, on the basis of the addiction background of the subjects as revealed by the clinical interviews, biographical questionnaires, laboratory urine analyses and medical prescriptions issued by the clinic, the subjects were in the first stage divided into two groups, only according to the severity of their addiction: one group numbered 15 subjects who were strongly addicted to drugs, while the other numbered 10 subjects - drug addicts who merely used the methadone prescribed in the clinic. It should further be noted that in order to examine the differences between the groups, we also carried out discriminant analyses of the various criteria defining the level of addiction, which showed that the nine indices are capable of predicting the group affiliation with 100% success.

We planned a long term research (three years), in which at the first stage (Time I) we wished to test our main assumption that with people who are in a severe state of addiction to hard drugs, the level of "existential frustration" will be expressed far more severely than with people who are less addicted. The subjects' attitude to their present condition and the main issues preoccupying them at present, as against the future "meaning" perspective in the Franklian context, were taken as the main indicators of "existential frustration". It should once again be noted that future "meaning" perspective and present "meaning" in their Franklian context are fundamentally different than the present meaning as far as drug addicts are concerned: to drug addicts, present meaning is the concrete physical meaning related to everything involved in the need for drugs and the means of obtaining them; overcoming the "crisis" brought on by deprivation of the drug is at the top of their hierarchy of needs. This experience of hard drug addicts is explained by Erikson (1961) and Maslow (1968), who argue that people progress in stages in order to develop qualities such as maturity and self-actualization. The first stage is development of a positive self-image and only then comes the second stage, which is related to life image or positive life regard. By successfully solving the second stage, which depends on the first stage of self esteem, the commitment to accomplish goals in life can develop. According to the findings of these researchers, positive life regard is closely related to self esteem. Nevertheless, they point out that self esteem is a pre-condition which is essential but insufficient for a positive life regard. Since

hard drug addicts are characterized by emotional immaturity, insecurity and low self esteem, they are probably fixated at the first stage of development. They never really succeeded in arriving at the stage of maturity, and are therefore preoccupied solely with the physical problems of the present and with satisfying their concrete and physical needs in order to relieve their distress. The hard drug addicts are unable to break through to the following stage, which involves commitment to accomplishing life goals. Their needs are at the bottom of the hierarchy according to any accepted scale.

The findings at Time I show that hard drug addicts in fact have no "existential meaning", while those undergoing withdrawal reveal the "existential meaning" of their lives. The results of the experimental questionnaire (IIT) indicate clearly that the hard-core addicts did not relate to "meaning" in its Franklian context, but only to present meaning as they experienced it i.e., obtaining drugs. From the point of view of logotherapy, this meaning is not "meaning in life", but an illusion of "meaning", a kind of meaning in a very physical and concrete context. In reality, these people are in a clear state of "existential vacuum" in its Franklian meaning. On the other hand, for the drug addicts who used only methadone, both the present and the future play a significant role in their attribution of chances of addiction.

Significant findings in regard to the "meaning in life" and "existential vacuum" of both groups of subjects at

Time I resulted also from all parts of the PIL test. According to the results of the first part of the PIL test, the hard-core addicts group were found to be in a state of a complete "existential vacuum" - lack of "meaning" and purpose in life. The average score of these subjects was 80.8, with scores ranging from a low of 36 to two exceptions (subjects 3 and 11) who scored 115 and 127 respectively on this part of the test. These two scores, which according to the authors' instructions indicate clear "meaning in life", could perhaps have refuted the assumption that hard drug addicts have no "meaning in life". However, thorough examination of the responses of these two subjects to the open parts (Parts II and III) of the PIL test, as well as the clinical interviews, indicate clearly that their replies to Part I of the test are unreliable: the addiction history of subject 3 was extremely severe - at the age of 14 he began using mild drugs and at the age of 17 hard drugs (heroin, cocaine, Prodormol, opium and valium). Furthermore, in terms of his criminological background, this subject's father is a drug addict who is currently serving a prison term for drug offences and his four brothers and one brother-in-law are serving long prison terms for robbery, breaking and entering and attempted murders. The subject himself was recently released from arrest on a charge of drug use and trafficking. His responses to the closed part of the PIL test were apparently manipulatory for the most part and did not reflect his true feelings. It is reasonable to assume that because this part of the test was a forced choice questionnaire, the subject felt under pressure and consequently attempted to express a feeling of

omnipotence, which is characteristic of his criminal image. However, immediately thereafter, in the free conversation with him on the basis of Parts II and III of the test, the truth behind his words was revealed. For example, while he marked 7 (the highest score) for Question 17 of Part I of the test "I regard my ability to find a meaning, purpose or mission in life as:", his answer to Question 7 of Part II, "My entire goal in life is...", was: "...to obtain drugs at any price and to break the 'crisis'". Comparison of the other answers, which were essentially identical, in both parts of the test resulted in a similar situation, and final confirmation of the subject's feeling of "existential vacuum" was obtained from Part III of the test and the clinical interview. A similar situation was found with subject 11, who has also been addicted to hard drugs for seven years. During the clinical interview, he claimed to have become addicted to drugs because of boredom, lack of a occupation and depression. He too has served four years in prison because of rape, drugs and attempted murder. According to him, he does not want to withdraw from drugs at all, because then he will lose the financial support of the National Insurance Institute, and work is "completely out of the question, it's not for me...". His response to Part I of the PIL test was apparently similar to that of subject 3, and with him too the answers to Parts II and III of the test were radically different to Part I. For example, to Question 10 of Part II, "I accomplish...", he replied: "...all kinds of illusions", and in Part III he said, "I have no goals or aspirations at all. Life is one big bore". Upon examination of these two exceptional scores, in

comparison to the other tests on the same subjects, the obvious conclusion is that they do not contradict the general result of all subjects in this group (Group A), indicating that they were in a state of "existential vacuum".

Unlike Group A, the average result on Part A of the PIL test in Group B was 97.3, which means unclear definition of "meaning in life" (the indecisive range). However, for three subjects (16, 18 and 22) of the ten had a raw score of above 112, which indicates clear "meaning in life". This is also expressed in the other parts of the PIL test and the clinical interviews of these subjects. As a rule, although the general result of 97.3 does not suffice to indicate that all subjects in the group had clear "meaning in life", it should not be forgotten that this group does not consist of a population which has already withdrawn from drugs completely, but people who are in the stages of withdrawal, and this result apparently reflects the process they are undergoing, a process of a search for "meaning in life" and transition from a state of "existential vacuum".

In general, the results of Part II of the PIL test also confirm the assumption of the study that the group of hard-core addicts will be found in a state of "existential vacuum" and the group of the drug addicts will be found to be searching for "meaning in life". Nevertheless, we wish to discuss a number of results which to first appearances seem incongruous. In Group A, subjects 6 and 12 were ranked 2 on a scale of five in the second category ("existential

vacuum"), which is a relatively low score in this category, while their scores in Part I of the test and the clinical interviews indicated clear "existential vacuum". It is reasonable to assume that since the score in the first category of "existential meaning" was also relatively low, it was present meaning, in the context of the lives of drug addicts, which was highly dominant for both subjects, which gave the seemingly distorted picture. Subject 6 is apparently engaged in a constant struggle with himself, in his efforts to conceal from his family and the police the methods (theft) by which he obtains funds for the large quantities of drugs that he uses. The fear that he may find himself without supplies of drugs keeps him awake at nights. His world during the day and his dreams during the night revolve around the subject of drugs. It may therefore be assumed that these anxieties were also expressed in the category of "existential vacuum", where purpose or meaning were perceived as the concrete meaning of the moment. In subject 12, we found a similar emotional conflict with the family and environment, particularly in view of the fact that the subject admitted that he had been a kleptomaniac since a young age and had often been forced to steal money even from his parents (his father is treasurer of a large company and his mother works at a bank).

The opposite pattern shown by the scores of subject 21 (in Group B) in this part of the PIL test is also worthy of further discussion. This subject scored low (1) in the first category, which indicates "meaning in life", while in the second category, which indicates "existential vacuum" he

received the highest score (5), which are doubtless incongruous scores in this group. However, in this case incongruities were found not only in this part of the test, but also in the results of the other parts of the PIL test. In Part I of the PIL test, the subject's raw score was 52, which indicates no "meaning" or purpose in life, i.e. "existential vacuum". Further examination of Part III of the PIL test and the subject's biographical questionnaire indicate that the subject is exceptional in all respects, with the exception of his addiction history. The subject, who is 27 years old, comes from a small village in Holland and is the youngest of his five brothers and sisters. His father is a Christian and his mother is Jewish. At the age of 10, because of his very attractive, somewhat effeminate, appearance and pleasant and unusual voice, he was sold by his father, because of financial difficulties, to a purported entertainment agent, so as to perform in bars as a singer. Within a short time, he was forced by this manager to engage in male prostitution. At the age of 13, he was forced to use hard drugs (heroin and cocaine). At the age of 15, he underwent a sex change operation, and continued to engage in prostitution. When he caught on, at the age of 20, he fled from Holland and came to Israel, where he began to struggle to return to his male identity. He underwent an operation to remove his breasts in Eilat, enlisted in the army and completed full military service as a new immigrant. Within this framework, he also met a girl and they were married. After one year of marriage, when his wife's family learned of his background, they were forced to divorce one another. According to him, at a certain stage he also began

to feel that he is unable to function as a male, as he had expected. During the entire period since he came to Israel, he progressively stopped using hard drugs and switched to methadone. According to the subject, he is on the way to withdrawal from drugs, but he is afraid to stop using methadone completely, since without the drug he may not be able to withstand his difficult situation, loneliness and inability to form a real relationship with members of either sex. According to him, "I have no sex, no religion, no identity, I have no... I have no being as a man...". Because of his depressed condition (he has twice attempted suicide), failures as a person and deep-seated anxieties over his lack of self-identity, his present meaning is not necessarily a function of the pursuit of drugs. His "existential vacuum" is more a product of lack of ego identity, as defined by Erikson (1961). Although the results of this subject's tests reinforce the diagnostic validity of the PIL test in regard to "meaning in life" and "existential vacuum", in terms of the present research method, an error may have been made by including him in the sample merely on the basis of his addiction history, in spite of his unusual psycho-physiological and social condition. By revealing in all tests a pattern which is the opposite of his group's, he slightly distorted the general results of the group as a whole. Nevertheless, upon recalling the principles of the theory of logotherapy, it is clear that this approach does not contradict the psycho-physical and social causes of drug addiction. It merely adds to them the dimension of the spiritual conflict, which is important even for this exceptional subject.

The results of Part III of the PIL test were also found to fully correspond to the other parts of the test and the biographical questionnaire. The next stage at this time of the study (Time I) was therefore to carry out a concurrent validation between the results of the PIL test, which is based entirely on Frankl's orientation, and the part of the LRI test which is relevant to "meaning in life" and the experimental questionnaire IIT. The aim of this structural validation was mainly to test the ability of the information integration paradigm, in regard to Frankl's theory on the one hand and the world of drug addicts on the other, to serve among the personality tests as an experimental instrument for the differential diagnosis between hard-core drug addicts and those with a potential for withdrawal, whereby this potential will be a product of the degree to which the present time perspective corresponds to the future time perspective. However, although high significant structural validation between the above three indices was found, due to methodological difficulties (which will be discussed later), concerning mainly the population of the present study, it will be necessary to perform several more tests of the experimental questionnaire on a similar population in order for it to finally be capable of serving this purpose.

After finding a concurrent validation among the PIL test, the part of the LRI test which is relevant to "meaning in life", and the experimental questionnaire IIT, and since technical difficulties were encountered in the statistical processing of the concept of "meaning in life" so as to

include the final scores of the subjects in Part II of the PIL test, which was conducted on the basis of a content analysis, the raw scores of Part III of the PIL test, which was an open question and the scores in the LRI test, we decided to carry out a Manova test and a discriminant analysis in regard to the differences between the groups of subjects only on the basis of the final scores of the subjects in Part I of the PIL test and the experimental questionnaire IIT, and to examine whether these scores alone reflect the meaning in life index. We found that these three indices actually did result in the same diagnosis which had been found previously, i.e. that hard drug addicts are characterized by more present meaning and that withdrawing addicts are characterized by less present meaning and more future meaning. Accordingly, we decided later in the present study to use these three indices to assess the level of meaning in life of the subjects.

The correlation between the meaning in life indices as described above and the addiction/withdrawal indices based on the criteria for assessing the success of withdrawal from hard drugs was also tested by calculating Pearson correlation coefficients and by a canonical correlation. In both analyses, high linkage was found between the addiction/withdrawal indices and the meaning in life indices. Subjects who did not attach importance to future meaning showed a higher level of addiction than those who did attach importance to future meaning.

Thus far we have dealt with the results of the tests carried out at Time I and with the structural validation of the experimental questionnaire IIT. As mentioned, the present study took three years, and accordingly we will now deal with the findings of the longitudinal analyses.

Our assumption was that over time, differential behaviour would be found in the two groups of subjects, with the hard-core addicts group responding less to treatment and failing to achieve a high degree of success according to the criteria for the success of withdrawal and rehabilitation, while the second group of subjects, whose levels of addiction at the beginning of the study was lower than those of the first group and who at Time I had begun to see "meaning", i.e., a future time perspective in their lives, were expected to respond better to treatment and reach a higher level of withdrawal and rehabilitation than those of the first group according to the criteria for assessing the success of withdrawal and rehabilitation.

In order to examine the behaviour of the subjects in terms of withdrawal from drugs over time, we mainly used the indices for assessing the withdrawal and rehabilitation of drug addicts. Since we assumed that if we were to have conducted at Time II and Time III the full battery of tests which examine meaning in life, in view of the logotherapeutic treatment the subjects underwent during those periods and the repeated use of the concepts of "meaning in life", we would have received extremely biased results. We were actually forced to work with the instrument

mentioned above as the main index, whereby both: the elements of meaning in life and those of the logotherapeutic treatment were in all instances shown with their correlation to the addiction/withdrawal indices. After finding at Time I that all nine indices of the criteria for assessing the success of withdrawal and rehabilitation were capable of predicting group affiliation with 100% success, we carried out a structural validation of these indices at Time III and found that there are strong links between the indicators. This made it possible to use them for the purpose of assessing the level of addiction/withdrawal of the subjects relative to the level of meaning in life as well, without carrying out the specific tests for assessing the level of meaning in life as was done at Time I.

Upon examination of the links between the subjects' initial level of addiction and their final level of addiction, we found that there was an improvement among the sample studied in terms of all the addiction/withdrawal indices. The high correlation indicates a consistent pattern between Time I and Time III, i.e., subjects who showed high levels of addiction at Time I, tended to show this at Time III as well and subjects who were relatively better off at Time I, improved more at Time III. Nevertheless, in view of the assumptions of the present study, we were particularly interested in examining the relationship between the "meaning in life" indices during the first period and the level of addiction/withdrawal at Time III. From the examination, we found that in general there were links between meaning in life and attachment of

importance to the search for a purpose in life and the lower level of addiction. The significance of the correlation between meaning in life at Time I and the level of methadone use at Time III was particularly significant. We also found links which indicate that subjects who at Time I thought that the search for meaning in life may effect the level of addiction used less illicit drugs, missed less therapy sessions, functioned better in the family, associated less with drug user friends and functioned better in society three years later.

In the hierarchical regression which we carried out, we further examined to what degree the meaning in life indices make an additional contribution to the withdrawal prognosis and are capable of explaining the final level of addiction beyond the initial level of addiction. We found here, that as regards prediction, most of the addiction/withdrawal indices at Time III, although there was no significant increase by the meaning of life variables beyond the contribution of their level at time I, the addition of the meaning of life indices was able to raise the explained variance percentage above the threshold of significance. In other words, the change in the subjects' attitude to "meaning of life" at Time III, reflected the fact that subjects, who at time I attached importance to future meaning, also attached importance to future meaning at Time III. However, those for whom present meaning was the dominant dimension of their lives at Time I, advanced toward finding meaning in life, even though their progress was slower. These findings may be viewed as reinforcing the

theory of logotherapy, which helps prevent the labelling of addicts as despairing individuals and thus indirectly prevents a prediction which may become self-fulfilling, holding that even hard-core addicts can withdraw, albeit by a slow and lengthy process and that even they have the ability to find the meaning they will want to obtain.

Fraser (1970) holds that in reality, addicts are constantly faced by a hostile society which in most instances refuses to make a maximum effort to help them and prefers, for reasons of its own, to continue to treat them as dangerous criminals, or "in the best case" as total cripples. We in Israel remember the embarrassing, literally sub-human situations of drug addicts here, whereby they were sent to a garbage dump to obtain their prescriptions for drug substitutes. Sending them to the garbage dump was symbolic of the general attitude of a purportedly enlightened society (Ben-Yehuda, 1982, page 12). As far as the addicts themselves are concerned, this severe stigma which was attached to them by society, which sees no chance of them becoming rehabilitated, reinforces their despair and forces them into a situation of surrender and a moratorium on thought. Not only do biological disorders, emotional immaturity or social problems prevent them from overcoming their handicap, but their spirit also becomes depressed and they are deprived of the will to aspire, to fight and change things and to search for new meanings in their lives.

As mentioned earlier, all subjects in the present study participated in psychotherapy according to the logotherapy

method during the entire follow-up period (Time II) for three years. In the statistical analyses which we carried out in regard to the correlation between logotherapeutic therapy and the level of withdrawal of the subjects at Time III, we found that the subjects of the second group, who at Time I were at a lower level of addiction than the subjects of the first group, were more cooperative in the therapy, missed less therapy sessions and achieved a higher level of withdrawal. Nevertheless we also found that for the subjects of the first group participation in therapy was relevant beyond their initial level of addiction. Although, we wish to note that because of methodological problems, which will be discussed later, at this juncture it is still too early to discuss causality between logotherapeutic therapy and withdrawal from drugs. The findings of the present study appear to point to the conclusion that participation in logotherapeutic therapy is highly relevant to the condition of each subject after long term therapy.

We once again would like to reiterate, that logotherapeutic therapy does not intend to replace other methods of therapy, but only add to them the concepts of meaning in life. From her experience as a logotherapist treating drug addicts, Lucas (1977) says that logotherapy enters the therapeutic process only after the process of de-toxification by means of physio-psychological and pharmacological methods, since before the process of removal of the physiological and psychological barriers, it is impossible to reach the sources of the spirit and it is impossible to talk to addicts about goals and future meaning

in life. However, if logotherapy does not enter the therapeutic picture when these process are completed, a situation arises wherein addicts who have been "cured" appear to leave the treatment centers physically free from drugs, with a strong indoctrination of abhorrence of drugs, but while they are still filled with anxieties, doubts, frustrations, the burden of past traumas and insecurity over the future. In most cases, they wonder whether their withdrawal served any purpose and what they will do with their lives which were "repaired" for them. If logotherapy does not come into operation at that stage, then in most cases they regress back to drugs. It should be noted that the subjects of the present study were also enrolled in a methadone maintenance program, and the logotherapeutic therapy was administered in addition to pharmacological and physiological therapy.

To sum up the longitudinal analyses of this study, we would like to say, that in regard to the population of the present study, its findings actually confirmed all of its hypotheses. Nevertheless, the findings of the present study do not place logotherapy in conflict with other theories dealing with addiction to hard drugs. The very fact that logotherapy views the individual as a complex of all his systems - the biological, psychological, social and spiritual systems - shows that its attitude toward addiction to hard drugs neither contradicts nor supports the other drug theories. This concept of logotherapy simply adds an element to the other theories, emphasizing one of the unique components of the individual as a man, his human element,

and his aspirations for purpose and "meaning in life". In this regard, logotherapy may be viewed as somewhat superior to other theories, in that it is actually the only theory which denies the determinism characteristic of all other theories, each according to its specific approach. According to logotherapy, the individual is no longer perceived as the helpless victim of his biological structure, drives, impulses or social pressures which affect his behaviour, and it leaves every individual his freedom to choose, whereby with certain constraints he is capable of assuming responsibility and controlling his choices.

As mentioned earlier, the findings of the present study refer to the population of the study - drug addicts. The question arises whether it is also possible to refer them to other populations suffering from "existential vacuum". In other words: can we draw a conclusion about the external validity of the findings of this study. For example, there is not much difference between drug addicts, and criminals in terms of their personality characteristics. The problematic behaviour patterns of the criminal also include distortions and defects in various aspects of the time perception. As the drug addict, the criminal is also usually impulsive and impatient, his ability to plan for the future is limited and he is unable to plan for the long term. He is controlled by his immediate needs and drives, which are very concrete, and he is unable to delay the gratification of those drives. In most cases, this also gives rise to his trouble with the law and his inability to adjust to society. Friedlander (1947) describes the criminal as anti-social,

with a strong drive for immediate gratification of his wants, regardless of the consequences. According to her, this personality defect is caused by a defective transition from the principle of pleasure to the principle of reality. Brandt and Johnson (1955) found that criminals are more present oriented and their future time perspective is shorter and more limited than that of non-criminals.

In discussing crime in general, we cannot ignore the link which was found between psychopathy and criminality. This link has been dealt with in countless studies, but one of the more prominent is that by Wright (1971), who held that the criminal is actually a psychopath who is asocial rather than anti-social. In other words, his major characteristic is the almost total inability to show emotion and empathy toward others. He lives solely in the present and his behaviour is not directed by long-term goals. Eysenck (1970) also emphasizes that "the psychopath presents us with the mystery of crime in a pure, unique way and if we would be able to solve this mystery about the psychopath, we would have in our possession an extremely powerful weapon to use in the problems of crime in general" (pp. 55-56). Landau (1973) says that any definition of the "psychopathic" behaviour and any characterization of "the criminal personality" comprise, as one of the basic defects, the inability to delay immediate gratification. This is related to the short future planning range attributed to the criminal, which is expressed in a tendency to prefer immediate gratification, which on its part increases the

probability of deviant behaviour. This comparison of drug addicts, criminals and psychopaths gives rise to the thought that it may be worthwhile in the future to reconstruct the findings of the present study in different contexts, in regard to populations of criminals and psychopaths as well, as it might expand their generalization value. If criminals, like drug addicts, also suffer from "existential vacuum", there is room for considering applying logotherapy to the rehabilitation of criminals in general as well. It may well be that finding "meaning in life" for them will help them to break out of the cycle of crime, just as we assume that finding "meaning in life" for drug addicts help them to withdraw.

However, we should not forget that this limitation of external validation is not of decisive importance in regard to the central question of the present study, since what was tested here was Frankl's (1958, 1960, 1966, 1967, 1968, 1981, 1982) theory of existential meaning. The subjects themselves were actually a "good" testing ground for the theory, in that they are located at a most extreme point in terms of the theory. Thus, the implementation of the above recommendation that the external validity of the findings be expanded will not only help to accumulate information on hard drug addicts, but it may also help to validate the theory on a point which is highly relevant to it: in regard to people who are supposedly in a state of "existential vacuum".

Methodological Aspects

As mentioned earlier, the present study was conducted over a period of three years. During this period, although all the subjects took part in a treatment program at the "Medicate" Clinic, they nevertheless led their lives completely independently in their natural environment. In a research situation such as this, particularly over time, it may be assumed that for each subject there were several influential variables which were related to the subjects' test results, but over which we had no control. Thus, for example, significant events in the lives of the subjects which may have changed their attitudes to life in general and to "meaning in life" in particular. There is no doubt that had the study been made on a population similar in character but situated at a high security treatment center, for example and the method of the research had been participative observation, then the results would have been far more significant.

In general, the findings of the present study supported our assumption that there is a link between "existential meaning" and the withdrawal prediction. However, it should be noted that apart from the above substantial link, we found some other links between the initial level of addiction of the subjects and their level of addiction three years later. Thus, for example, in the discriminant analysis between the two groups of subjects from Time I to Time III, we found that all nine addiction/withdrawal indices were capable of retrospectively predicting the group affiliation

in 100% of cases, but particularly the use of illicit drugs, which was even far more prognostic. Thus even if we refer only to the theory of logotherapy, the conclusion is, that although we cannot ignore and must consider man's human-spiritual dimension; the individual acts and behaves according to all systems comprising him as a person. Indeed, from a research point of view, the present study is somewhat lacking, in view of the fact that we placed the emphasis on the link between "existential meaning" and withdrawing from hard drugs, while downplaying other dimensions constituting prognostic criteria for withdrawal from drugs; a methodological problem which although we tried to overcome in the present study by choosing a population of more or less homogeneous physical and psycho-social background, should be considered more carefully in future researches.

Another methodological problem which arose with the method of the present study is that there was no control group. This was reflected mainly in the difficulty in drawing clear conclusions as the correlation between logotherapeutic therapy and the level of withdrawal from drugs. Although the findings of the present study correspond to our assumptions that individuals who undergo such logotherapeutic therapy, will in general develop an attitude incorporating a future time perspective and will therefore have better chances of withdrawing from drugs. Nevertheless, since there was no control group in the present study which, for example, received no psychotherapy at all, or a control group which underwent a different form of psychotherapy, we would be disloyal to science if we

would go beyond the link found between logotherapy and withdrawal from hard drugs, to talk of an effect or a causal link between these two variables. However, since logotherapy is not a form of psychotherapy which is administered in isolation from other forms of treatment of drug addicts and since the findings of the present study indicate a very close link between the therapy and withdrawal, we strongly recommend ancillary logotherapeutic therapy for all drug addicts.

Thus far we have discussed the methodological aspects and methodological problems arising from the limitations of the method of the present study. We will now present several methodological aspects of the experimental questionnaire IIT which was specially constructed for the purposes of the present study.

Aaronson (1964) views the degree to which the subject enters into the experimental role (experimental realism) as a major problem of psychological research; it appears that there can be no better example of the difficulty in achieving experimental realism than an attempt to examine the "existential meaning" of individuals who are addicted to hard drugs. Their sustained psychological state of concretization and disassociation from reality, etc. make it extremely difficult to obtain their reaction to existentialist concepts, which are not concrete. Indeed, most subjects found it difficult at first to even understand the term "meaning" (purpose) appearing in the experimental questionnaire IIT. They interpreted "meaning" in terms of

the principal issue in their own lives - obtaining drugs - and were only able to move beyond the concretization and accept an interpretation of "meaning" in more general terms after lengthy explanations. It should be noted that some subjects, even after they had responded to the first few questions and it seemed that they properly understood the terms "meaning" and "purpose", later regressed to the concretization of the term "meaning", to the extent that the examiner was forced to repeat the question several times and restore their full concentration on the questionnaire. This problem casted substantial doubt on the success of the experimental part of the present study. Actually, only the results could make it clear whether and to what extent it would have been possible to extract from the subjects the "secrets" at which the present study aimed. Any such reply, when given post factum, must be based on the extent to which the results are meaningful in accordance with the literature and the questions with which the present project proposed to deal. Indeed, such suitability was found, for example, the distinction between momentary perspective and future perspective, which is of central importance to drug addicts, was shown by the experimental method to be highly effective: the hard-core drug addicts were shown as having a mainly momentary time perspective, while those undergoing withdrawal were shown to have both a momentary and future time perspective.

Notwithstanding the clear results we obtained, it should be noted that the sophisticated method upon which the experiment was based was not fully exploited in the present

study. By this we mean the option of transforming each subject into an individual experimental unit, by means of replicating the experiment several times.

Unlike the doubts and hesitation which were dealt before with regard to the external validity of the findings, we cannot conclude this section without mentioning the significant support for the experimental method resulting from the substantial empirical suitability between it and the two predispositional tests (PIL and LRI), which were designed to measure, with varying degrees of directness, the very phenomenon dealt with by the present project: "existential meaning". This suitability shows that the existential concepts which were tested by the experimental method are no different from those tested by the instruments designed for that purpose. In other words, this provided structural validation of the present method, i.e., the conceptual structure of the present method corresponds to the structure of the meaning questionnaires.

The "non-content" contribution of the present project is, therefore, a demonstration of the ability to obtain information on individuals in an extremely troubled psychological condition by means of a quantitative method different to the personality disposition and other similar questionnaires commonly used in clinical research to identify personality traits. These questionnaires are designed to describe a specific psychological characteristic or a complex of characteristic traits of the individuals of a specific population, defined according to the nature of

the problem. Here, actually the attribution of severity of addiction was tested.

Much has been written about attribution as a cognitive process (Fishbein and Ajzen, 1975). The literature focusses on that split second of the process during which the attribution judgment of the other individual or the self takes place, and deals exhaustively with an attempt to clarify how the actual process of attributing links between a visible outcome and an unseen cause or between the individual's "external" characteristics and his "internal" characteristics (traits) takes place. In our case, the special attribution testing method proposed by the Information Integration Theory was used to widen the focus beyond the moment at which the judgment takes place. This instrument, which was designed to test cognitive process and which is constructed in a purely experimental format, is completely different to the format of personality questionnaires, such as MMPI, for example. The important difference between personality questionnaires and the methodological experimental system used in the present study, is that here we place our content in a highly flexible framework, which forces us in terms of content to commit ourselves only to those dimensions which we feel are important to a given issue. On the other hand, each personality test presents both the technical framework and content structure as unchangeable factors. Any researcher using this instrument needs only to "discover" the "unique" profile of the population he is testing, subject to the given technical framework and content structure. In other

words, "personality" instruments of this nature cannot examine a theoretical question, but only identify individual differences. On the other hand, the instrument used in the present study, by virtue of the theory from which it is derived, is designed to examine psychological questions and issues beyond merely attaching "personality" labels to the individuals of a specific population. In our case, after selecting the theory we wished to validate - logotherapy - we took from the general theory called "Information Integration" an instrument which internalizes, quite perfectly, the dimensions which represent the theory that is to be validated. As explained earlier, these dimensions are the present perspective and future perspective of "existential meaning", which consist of all the elements of "meaning": insight, a rational and positive attitude to life, assumption of responsibility and motivation to change things and a feeling of ability to be useful.

Considering all the methodological limitations of the experimental instrument as described above, it appears that after the limitations are corrected, the instrument, in conjunction with the PIL test, will be able to be applied for the purpose of the differential diagnosis between drug addicts in terms of their chances of withdrawal and rehabilitation, which in itself is of great importance in view of the present situation, where no such instrument is available.

S U M M A R Y

In reference to the findings of the present study, it is seen that its most important contribution is that it provided empirical support for specific concepts of Frankl's theory of logotherapy, in regard to the link between "existential meaning" or "existential vacuum" and the behaviour of drug addicts.

Another perhaps no less important contribution is the operationalization of the term "meaning of life" that was carried out in the present study. This operationalization may be of use in the future in a variety of studies related to the theory.

As for the experimental instrument used for the purpose of the present study, we can see how this instrument may be used in the future for the differential diagnosis between various drug addicts according to their potential for withdrawal. This potential will be a product of the extent to which the present meaning perspective of drug addicts corresponds to their future meaning perspective. The advantage of this instrument is actually a product of the two theories underlying it: the theory of "existential meaning" which is related to the major elements of the psychological being of the drug addict, and the Information Integration Theory, which for the first time provides a framework for its methodical conceptual application.

A P P E N D I C E S

APPENDIX 1

Questionnaire Based on the Paradigm of the Information Integration Theory (IIT) - Anderson (1981, 1982)

Questions: Series 1

3 : 1

It is clearly evident that Mr. X does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he is searching for meaning in life?

3 : 3

It is clearly evident that Mr. X has meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he will search (in the future) for meaning in life?

2 : 2

It is rather unclear whether Mr. X has or does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is rather unclear whether he is searching for meaning in life?

1 : 2

It is rather unclear whether Mr. X has or does not have meaning (purpose) in life. What is the chance that he will

become addicted to hard drugs, if it is clearly evident that he is not searching for meaning in life?

1 : 1

It is clearly evident that Mr. X does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he is not even searching for meaning in life?

3 : 2

It is rather unclear whether Mr. X has or does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he is searching for meaning in life?

1 : 3

It is clearly evident that Mr. X has meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he will not search (in the future) for meaning in life?

2 : 1

It is clearly evident that Mr. X does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is rather unclear whether he is searching for meaning in life?

2 : 3

It is clearly evident that Mr. X has meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is rather unclear whether he will search (in the future) for meaning in life?

APPENDIX 2

Questionnaire Based on the Paradigm of the Information Integration Theory (IIT) - Anderson (1981, 1982)

Questions: Series 2

2 : 2

It is rather unclear whether Mr. X has or does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is rather unclear whether he is searching for meaning in life?

1 : 3

It is clearly evident that Mr. X has meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he will not search (in the future) for meaning in life?

1 : 1

It is clearly evident that Mr. X does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he is not even searching for meaning in life?

3 : 2

It is rather unclear whether Mr. X has or does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he is searching for meaning in life?

1 : 2

It is rather unclear whether Mr. X has or does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he is not searching for meaning in life?

3 : 3

It is clearly evident that Mr. X has meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he will search (in the future) for meaning in life?

2 : 3

It is clearly evident that Mr. X does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is rather unclear whether he will search (in the future) for meaning in life?

3 : 1

It is clearly evident that Mr. X does not have no meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is clearly evident that he is searching for meaning in life?

2 : 1

It is clearly evident that Mr. X does not have meaning (purpose) in life. What is the chance that he will become addicted to hard drugs, if it is rather unclear whether he is searching for meaning in life?

APPENDIX 3

Purpose in Life (PIL) Test - Crumbaugh and Maholick (1968, 1977)

PART I

Instructions:

This questionnaire has a total of 20 questions. Each answer may be divided into seven ratings. Tell me which number you think best expresses your opinion or feeling. Note that the numbers always extend from one extreme feeling (number 1) to its opposite kind of feeling (number 7). Number 4 implies no judgment either way; try to use this rating as little as possible.

1. I am usually:

1 2 3 4 5 6 7

Completely bored

Exuberant, enthusiastic

2. Life to me seems:

1 2 3 4 5 6 7

Completely routine

Always exciting

3. In life I have:

1 2 3 4 5 6 7

No goals or aims
at all

Very clear goals
and aims

4. My personal existence is:

1	2	3	4	5	6	7
Utterly meaningless, without purpose						Very purposeful and meaningful

5. Every day is:

1	2	3	4	5	6	7
Exactly the same						Constantly new and different

6. If I could choose:

1	2	3	4	5	6	7
I would prefer never to have been born						I would like nine more lives just like this one

7. After retiring, I would:

1	2	3	4	5	6	7
Loaf completely the rest of my life						Do some of the exciting things I have always wanted to do

8. In achieving life goals, I have:

1	2	3	4	5	6	7
Made no progress whatever						Progressed to complete fulfillment

9. My life is:

1 2 3 4 5 6 7

Empty, filled only
with despair

Running over with
exciting, good things

10. If I should die today, I would feel that my
life has been:

1 2 3 4 5 6 7

Completely worthless

Very worthwhile

11. In thinking of my life:

1 2 3 4 5 6 7

I often wonder why
I exist

I always see a reason
for my being here

12. As I view the world in relation to my life,
the world:

1 2 3 4 5 6 7

Completely confuses me

Fits meaningfully
with my life

13. I am:

1 2 3 4 5 6 7

A very irresponsible
person

A very responsible
person

14. Concerning man's freedom to make his own choices,

I believe that man is:

1 2 3 4 5 6 7

Completely bound by limitations of heredity and environment	Absolutely free to make all choices
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15. With regard to death:

1 2 3 4 5 6 7

I am unprepared and frightened	Prepared and unafraid
-----------------------------------	--------------------------

16. With regard to suicide:

1 2 3 4 5 6 7

I have thought of it seriously as a way out	I have never given it a second thought
--	---

17. I regard my ability to find a meaning, purpose or
mission in life as:

1 2 3 4 5 6 7

Practically none	Very great
------------------	------------

18. My life is:

1 2 3 4 5 6 7

Out of my hands and controlled by external forces	In my hands and I am in control of it
---	--

19. Facing my daily tasks is:

1 2 3 4 5 6 7

A painful and boring
experience

A source of pleasure
and satisfaction

20. I have discovered:

1 2 3 4 5 6 7

No mission and
purpose in life

Clear-cut goals and a
satisfying life-purpose

PART II

Instructions:

I will read to you 13 phrases. Complete them as quickly as possible, with the first thing that pops into your mind:

1. More than anything, I want _____.
2. My life is _____.
3. I hope I can _____.
4. I have achieved _____.
5. My highest aspiration _____.
6. The most hopeless thing _____.
7. The whole purpose of my life _____.
8. I get bored _____.
9. Death is _____.
10. I am accomplishing _____.
11. Illness and suffering can be _____.
12. To me all life is _____.
13. The thought of suicide _____.

PART III

Describe in detail your ambitions, goals in life. How much progress are you making in achieving them?

APPENDIX 4

Life Regard Index (LRI) Questionnaire - Almond and Battista (1973)

Instructions:

For each of the following sentences, there are five possible ways of expressing the degree to which the sentence applies to you. Tell me which answer is right and I will put an "X" in the appropriate place.

Sample:

I get satisfaction from my achievements in life:

Completely Wrong_____ Wrong -X- Sometimes Right_____
Right_____ Completely Right_____

1. I feel like I have found a really significant meaning for leading my life.
2. I have really come to terms with what's important for me in my life.
3. I have a system or framework that allows me to truly understand my being alive.
4. I have a very clear idea of what I'd like to do with my life.
5. There are things that I devote all my life's energy to.

6. I have a philosophy of life that really gives my living significance.
7. I have some aims and goals that would personally give me a great deal of satisfaction if I could accomplish them.
8. I just don't know what I really want to do with my life.
9. I really don't have much of a purpose for living, even for myself.
10. I need to find something that I can really be committed to.
11. I get completely confused when I try to understand my life.
12. There honestly isn't anything that I totally want to do.
13. I really don't believe in anything about my life very deeply.
14. Other people seem to have a much better idea of what they want to do with their lives than I do.
15. I have real passion in my life.
16. I really feel good about my life.

17. Living is deeply fulfilling.
18. I feel that I am living fully.
19. I feel that I'm really going to attain what I want in life.
20. I get so excited by what I'm doing that I find new stores of energy I didn't know that I had.
21. When I look at my life I feel the satisfaction of really having worked to accomplish something.
22. I don't seem to be able to accomplish those things that are really important to me.
23. Other people seem to feel better about their lives than I do.
24. I have a lot of potential that I don't normally use.
25. I spend most of my time doing things that really aren't very important to me.
26. Something seems to stop me from doing what I really want to do.
27. Nothing very outstanding ever seems to happen to me.
28. I don't really value what I'm doing.

APPENDIX 5

Biographical Questionnaire

Surname:

First Name:

Date of Birth:

Country of Birth:

Father's Country of Birth:

Mother's Country of Birth:

Location in Family Constellation:

Present Family Status:

Education:

Details of Military Service:

Closed Institutions:

Number and Durations of Arrests:

Types of Offences:

Employed or Unemployed:

If employed, type of work, number of hours per day, whether frequently changes workplaces, and if so, why:

If unemployed, whether employed in past, how long unemployed and why; whether supported, and if so, by whom:

What was first drug used; and how long did it take to progress to hard drugs:

Details of the occasion or event at which drugs first used:

Type of drugs taken in past and at present:

Past Withdrawal Attempts: (alone, hospital, prison, treatment center):

Does he believe he can withdraw from drugs? If yes, why does he think he will succeed.

How does he see himself: Violent, quiet, sociable or able to cope, etc:

Types of Friends: Drug users, some drug users, no drug users:

Underwent/did not undergo emotional therapy - details:

General impression from free conversation with subject on his developmental, socio-economic, physiological and emotional background and from his attitude toward his present condition:

What is his involvement in family life:

What is his involvement in social life:

APPENDIX 6

Raw Scores of Both Groups of Subjects to the Questionnaire Based on the Paradigm of the Information Integration Theory (IIT) - Anderson (1981, 1982)

Group I - Hard-Core Addicts

Subject 1

F U T U R E

		3	2	1
P 3	38	15	70	30
R				
E 2	77	50	80	100
S				
E 1	95	100	85	100
N				
T		55	78	77

Subject 2

F U T U R E

		3	2	1
P 3	16	18	10	20
R				
E 2	83	50	100	100
S				
E 1	89	87	80	100
N				
T		51	63	73

Subject 3

F U T U R E

		3	2	1
P 3	11	0	0	34
R				
E 2	50	8	100	43
S				
E 1	27	50	30	0
N				
T		19	43	26

Subject 4

F U T U R E

		3	2	1
P 3	28	10	50	25
R				
E 2	53	40	50	70
S				
E 1	73	40	80	100
N				
T		30	60	65

Subject 5

F U T U R E

		3	2	1
P 3	33	0	35	65
R				
E 2	66	50	100	50
S				
E 1	43	0	30	100
N				
T		17	55	71

Subject 6

F U T U R E

		3	2	1
P 3	15	9	30	6
R				
E 2	42	50	30	47
S				
E 1	73	69	70	80
N				
T		43	43	44

Subject 7

F U T U R E

		3	2	1
P 3	23	5	40	25
R				
E 2	58	40	55	80
S				
E 1	60	25	70	85
N				
T		23	55	63

Subject 8

F U T U R E

		3	2	1
P 3	28	20	50	15
R				
E 2	60	30	60	90
S				
E 1	80	70	70	100
N				
T		40	60	68

Subject 9

F U T U R E

		3	2	1
P 3	13	10	10	20
R				
E 2	53	10	50	100
S				
E 1	57	20	50	100
N				
T		13	37	73

Subject 10

F U T U R E

		3	2	1
P 3	50	60	50	40
R				
E 2	87	60	100	100
S				
E 1	73	70	50	100
N				
T		63	67	80

Subject 11

F U T U R E

		3	2	1
P 3	12	30	2	5
R				
E 2	15	10	15	20
S				
E 1	23	40	4	25
N				
T		27	7	17

Subject 12

F U T U R E

		3	2	1
P 3	19	2	20	35
R				
E 2	58	25	50	100
S				
E 1	58	25	50	100
N				
T		17	40	78

Subject 13

F U T U R E

		3	2	1
P 3	60	80	50	50
R				
E 2	67	20	80	100
S				
E 1	83	50	100	100
N				
T		50	77	83

Subject 14

F U T U R E

		3	2	1
P 3	0.3	1	0	0
R				
E 2	5	1	5	10
S				
E 1	7	1	10	10
N				
T		1	3	7

Subject 15

F U T U R E

		3	2	1
P 3	57	50	50	70
R				
E 2	60	50	50	80
S				
E 1	73	90	40	90
N				
T		63	47	80

Group II - Drug Addicts

Subject 16

F U T U R E

		3	2	1
P 3	52	60	30	65
R				
E 2	30	20	20	50
S				
E 1	37	40	30	40
N				
T		40	27	52

Subject 17

F U T U R E

		3	2	1
P 3	33	20	30	50
R				
E 2	62	40	75	70
S				
E 1	67	40	70	90
N				
T		33	58	70

Subject 18

F U T U R E

		3	2	1
P 3	40	20	50	50
R				
E 2	93	90	90	100
S				
E 1	70	20	90	100
N				
T		43	77	83

Subject 19

F U T U R E

		3	2	1
P 3	30	0	40	50
R				
E 2	53	30	50	80
S				
E 1	63	30	60	100
N				
T		20	50	77

Subject 20

F U T U R E

		3	2	1
P 3	10	10	20	0
R				
E 2	22	20	15	30
S				
E 1	40	30	50	40
N				
T		20	28	23

Subject 21

F U T U R E

		3	2	1
P 3	32	10	10	75
R				
E 2	67	50	100	50
S				
E 1	68	30	75	100
N				
T		30	62	75

Subject 22

F U T U R E

		3	2	1
P 3	13	0	25	15
R				
E 2	43	30	30	70
S				
E 1	52	10	60	85
N				
T		13	38	57

Subject 23

F U T U R E

		3	2	1
P 3	16	0	40	8
R				
E 2	32	2	15	80
S				
E 1	27	12	16	52
N				
T		5	24	47

Subject 24

F U T U R E

		3	2	1
P 3	43	0	50	80
R				
E 2	37	10	30	70
S				
E 1	50	0	50	100
N				
T		3	43	83

Subject 25

F U T U R E

		3	2	1
P 3	18	5	20	30
R				
E 2	27	5	25	50
S				
E 1	28	10	25	50
N				
T		7	23	43

APPENDIX 7

Raw Scores of the Subjects to the Purpose in Life (PIL) Test by Crumbaugh and Maholick (1968, 1977)

PART I

Group I - Hard-Core Addicts

Subject No.	Raw Score
1	69
2	89
3	115
4	63
5	38
6	92
7	62
8	92
9	110
10	36
11	127
12	67
13	61
14	99
15	92

Group II - Drug Addicts

Subject No.	Raw Score
16	120
17	99
18	127
19	96
20	97
21	52
22	130
23	69
24	98
25	85

APPENDIX 8
INDIVIDUAL RESULTS OF EACH SUBJECT ON INDICES FOR ASSESSMENT OF THE SUCCESS OF WITHDRAWAL
AND REHABILITATION ATTEMPTS BY DRUG ADDICTS ACCORDING TO CRITERIA DETERMINED BY M. BEN YEHUDA (1981)

PART I:

Use, Non-Use and Types of Drugs used by the Subjects according
to Laboratory Reports on the Subjects' Urine Analysis

Subject No.	Type of Drug Found in October '84					Type of Drug Found in April '85					Type of Drug Found in October '85					Type of Drug Found in April '86					Type of Drug Found in October '86					Type of Drug Found in April '87					Type of Drug Found in October '87				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5					
GROUP A																																			
1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
GROUP B																																			
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
A=	13	15	12	8	12	12	15	7	7	12	12	14	8	9	13	13	12	6	9	14	14	10	4	9	11	14	10	5	8	9					
B=	10	0	2	1	4	10	0	0	2	6	10	0	0	1	5	10	0	0	2	1	8	0	0	1	1	6	0	0	0	4	0				

* 1-Methadone * 2-Heroin * 3-Opium * 4-Amphetamines * 5-Barbiturates

PART II:

Amount of Methadone Consumed Daily in Milligrams

Maximum Administered Subject No.	90 mg. Oct. '84	90 mg. April '85	80 mg. Oct. '85	60 mg. April '86	40 mg. Oct. '86	40 mg. April '87	40 mg. Oct. '87
GROUP A							
1	90	90	80	60	40	40	40
2	90	90	80	60	40	40	40
3	90	90	80	60	40	40	40
4	90	90	80	60	40	40	40
5	90	90	80	60	40	40	40
6	90	90	80	60	40	40	40
7	90	90	80	60	40	40	40
8	90	90	80	60	40	40	40
9	90	90	80	60	40	40	40
10	90	90	80	60	40	40	40
11	90	90	80	60	40	40	40
12	90	90	80	60	40	40	40
13	90	90	80	60	40	40	40
14	90	90	80	60	40	40	40
15	90	90	80	60	40	40	40
GROUP B							
16	80	70	50	40	30	20	10
17	90	80	80	60	40	0	0
18	80	70	60	50	40	30	20
19	90	80	60	40	0	20	0
20	80	60	40	30	20	0	0
21	90	80	60	40	40	40	40
22	90	80	70	50	30	10	0
23	90	80	60	60	40	0	40
24	70	50	40	20	10	0	0
25	90	80	70	30	0	20	0

PART III.

Regularity and Consistency of Attendance at Psychotherapy Sessions
(24 meetings every six months)

Treatment Period	Reason for Non-Attendance	GROUP A												GROUP B												
		Number of times failed to attend sessions																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Nov. '84 to April '85	Arrest/Imprisonment	3	4	1	3	14	3	3	4	23	12	14	1	1	1	1	1	1	12	4	2	4	2	22	3	1
	Illness	4	5			2	4						1	2	3			3	4	4	6	1	22	3	2	
	Family reasons	1	1	1	1	4	2						1	1	3			1					1	2		
	Vacation	2						2																		
April '85 to May '85	Therapist	8	6	10	12	4	8	10	11	5		6	2	8	6	11	2	1	1			4	3			5
	No reason																									
	Arrest/Imprisonment	1	1	2	1	3	3	1	1	24	4	4	24	1	3	3	5		4	1			1	2		
	Illness	2	2				2	4			3	2		3	2	4	1		5	1	1	1	2	2	1	1
Oct. '85 to Nov. '85	Family reasons	2	2				1																			
	Vacation	2	2	2	2	2	2	2			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Therapist	10	5	7	11	6	8	9	12		1	4	7	5	6	1		1	2	1	1	1	4	1		2
	No reason																									
Nov. '85 to April '86	Arrest/Imprisonment	17	1				3	2	2	24	4	24		1	3	1		1		1	2	3				1
	Illness	3		3	2						2		5	2		5	3		2	1	1	1	3	1	2	2
	Family reasons	1	4	1	1		1	4						1					1							
	Vacation	2	1				1																			
April '86 to May '86	Therapist	6	8	1	10	10	12	11	7	5			12	10	11	6	2		4			6	2			1
	No reason																									
	Arrest/Imprisonment	13				1	21	1	24	22	6	12	4	1	1					3	2	1	1	1	1	1
	Illness	2		6				5			5			5	1	5	1		1	2	1	1	1	1	1	1
Oct. '86 to Nov. '86	Family reasons	2	5	3	4																					
	Vacation																									
	Therapist	6	4	9	5	6	7			7		7	11	5	10	7	1	3	2	1	2	2	2			1
	No reason																									
Nov. '86 to April '87	Arrest/Imprisonment	14	1		3		24		3		24	1		3	1							1				
	Illness						4	1		3		6	2	4	1				3	3	2	1	1	1		
	Family reasons						1					2		1	2						2	2	1	2	2	
	Vacation						1	4																		
April '87 to May '87	Therapist	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	No reason	7	5	7	5	8	10	6	10				8	3	6	4		2	1			1	1	1	2	
	Arrest/Imprisonment	2		3		1		1	16		15	10		1	1					1		1				
	Illness																									
Oct. '87 to Nov. '87	Family reasons	1	3		2	2	1	1	4	2	1		3	1	2	2	1		2	2	1	1	3			2
	Vacation																									
	Therapist																									
	No reason	5	4	6	2	10	6	1	4	1			6	8	4	3							1	1		

Illegal Activity Before and During Enrollment in the Study

A = No. of Arrests by each subject

PART V.

Employment Patterns Before and During Enrollment in the Study

Subj.	Employment Patterns 1 2 April '84 - Oct. '84						Employment Patterns Nov. '84 - April '85						Employment Patterns May '85 - Oct. '85						Employment Patterns Nov. '85 - April '86						Employment Patterns May '86 - Oct. '86						Employment Patterns Nov. '86 - April '87						Employment Patterns May '87 - Oct. '87					
	A	B	C	D	E		A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E						
No.																																										
1	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
2	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
3	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
G4	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
R5	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
O6	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
U7	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
P8	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
9	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
A10	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
11	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
12	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
13	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
14	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
15	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
16	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
17	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
G18	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
R19	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
O20	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
U21	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
P22	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
23	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
B24	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
25	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						

Key:

A - Type of work

B - Number of Hours Worked per day

C - Number of times changed workplace

D - Reason for change of workplace

E - If supported, by whom

1 - October '87 - Unemployed

2 - October '87 - Employed

(e - employee, s - self-employed)

(d - dismissed, w - willfully, p - physical, m - mental)

(n - national welfare, f - family)

PART VI.

General Functioning within the Family and Society, Before and during Enrollment in the Study

Subject No.	April '84 - Oct. '84			Nov. '84 - April '85			May '85 - Oct. '85			Nov. '85 - April '86			May '86 - Oct. '86			Nov. '86 - April '87			May '87 - Oct. '87								
	a	b	c	d	e	f	g	h	i	a	b	c	d	e	f	g	h	i	a	b	c	d	e	f	g	h	i
GROUP A	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
GROUP B	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

XX:

- a = Good involvement in family life.
 b = Partial involvement in family life.
 c = No involvement in family life.
 d = Drug user friends.
 e = No drug user friends.
 f = Some drug user friends.
 g = Involved in community life.
 h = Sometimes involved in community life.
 i = Not involved in community life.

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Name:	Katz (Simon) Sarah
Date of Birth:	May 29th 1940
Place of Birth:	Tel-Aviv, Israel
Family Status:	Married, with three children
1958:	Graduated from high-school, successfully passed all matriculation examinations.
1958 - 1960:	Military service (obligatory in Israel)
1961 - 1964:	Zurich University, Department of Psychology
1964 - 1965:	Tel-Aviv University, Department of Psychology
1964 - 1965:	Employed as child psychologist at the Municipality of Tel-Aviv, Department of Education
1966 - 1981:	Voluntary psychological counselling under supervision of Dr. B. Geoni of "Shalvata" Mental Hospital and the School of Psychotherapy, University of Tel-Aviv.

- 1981 - 1985: Bar-Ilan University, Department of Clinical and Research Criminology, (practical work under supervision of Prof. Dr. Silfen, at "Tel-Mond" Juvenile Prison).
- 1986: Awarded M.A. degree by Bar-Ilan University.
- 1984 - Present: Employed at "Medicate" Drug Addicts Treatment Center.
- 1987: Awarded Certificate of Specialization in the treatment of dependency on drugs and alcohol from Bar-Ilan University, Center for Supplementary Studies in Health Sciences (awarded for 250 academic hours of study)

